

# **POND 15S**

## **Waste Management Unit 3**

**Note:**

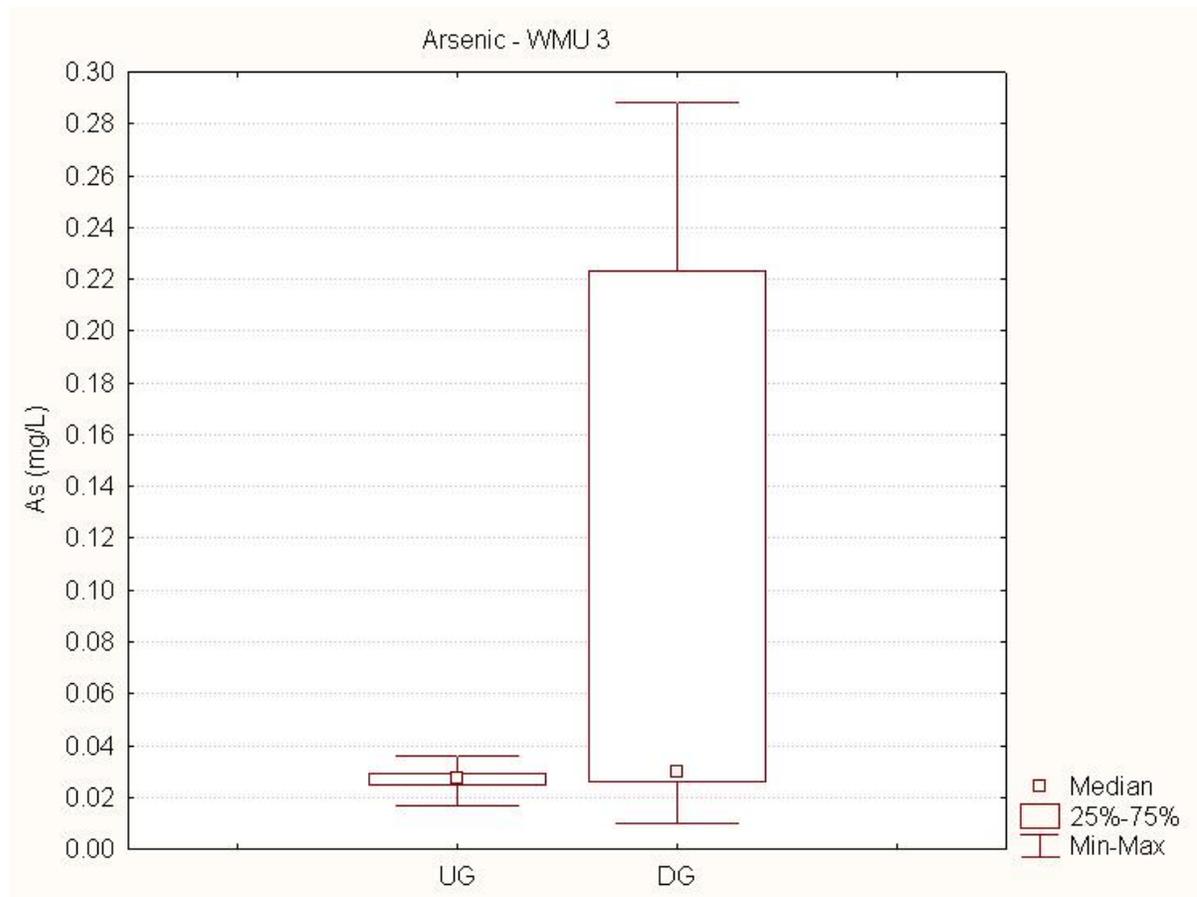
- 1. Time series plot scales are variable depending on the concentrations.**
- 2. Undetected values are not plotted on time series plots**

# WMU 3 TEST 1 ARSENIC

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	76	0.027	9627.0	6701.0	-4.30	<0.0001
Downgradient	261	0.030	47326.0			

**Summary:** The median arsenic concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR POND 15S (WMU 3)

<b>Arsenic</b>				
<u>Date</u>	<b>Upgradient Well</b>	<b>Downgradient Wells</b>		
	<b>Well 165</b>	<b>Well 113</b>	<b>Well 115</b>	<b>Well 166</b>
Sep-91	N.S.	0.0366	0.1790	N.S.
Dec-91	N.S.	0.0382	0.1830	N.S.
Mar-92	N.S.	0.0349	0.1900	N.S.
Jun-92	N.S.	0.0308	0.2070	N.S.
Sep-92	N.S.	0.0303	0.1772	N.S.
Dec-92	N.S.	0.0321	0.2023	N.S.
Mar-93	N.S.	0.0394	0.1546	N.S.
Jun-93	N.S.	0.0291	0.2524	N.S.
Sep-93	N.S.	0.0350	0.1875	N.S.
Dec-93	N.S.	0.0276	0.1665	N.S.
Mar-94	N.S.	0.0372	0.2231	N.S.
Jun-94	N.S.	0.0271	0.1314	N.S.
Sep-94	N.S.	0.0198	0.1715	N.S.
Dec-94	N.S.	0.0362	0.2101	N.S.
Mar-95	N.S.	0.0250	0.2204	N.S.
Jun-95	N.S.	0.0257	0.2389	N.S.
Sep-95	<b>0.0165</b>	U	0.2033	0.0244
Dec-95	<b>0.0284</b>	0.0267	0.1756	0.0210
Mar-96	U	0.0281	0.1678	0.0212
Jun-96	<b>0.0270</b>	0.0278	0.1532	0.0235
Sep-96	<b>0.0280</b>	0.0320	0.2000	0.0320
Dec-96	U	U	0.2300	U
Mar-97	<b>0.0290</b>	0.0270	0.2100	0.0280
Jun-97	<b>0.0290</b>	0.0320	0.2300	0.0290
Sep-97	<b>0.0360</b>	0.0350	0.2300	0.0310
Dec-97	<b>0.0310</b>	0.0290	0.2100	0.0270
Feb-98	<b>0.0240</b>	0.0270	0.1900	0.0250
May-98	<b>0.0320</b>	0.0300	0.2300	0.0260
Aug-98	<b>0.0290</b>	0.0270	0.2100	0.0240
Nov-98	<b>0.0280</b>	0.0290	0.2100	0.0220
Feb-99	<b>0.0250</b>	0.0300	0.2000	0.0260
May-99	<b>0.0320</b>	0.0340	0.2400	0.0280
Aug-99	<b>0.0285</b>	0.0281	0.2220	0.0268
Nov-99	<b>0.0320</b>	0.0311	0.2530	0.0294
Mar-00	<b>0.0270</b>	0.0305	0.2480	U
May-00	<b>0.0288</b>	0.0306	0.2330	0.0273
Aug-00	<b>0.0302</b>	0.0286	0.2540	0.0286
Nov-00	<b>0.0305</b>	0.0337	0.2480	0.0264
Feb-01	<b>0.0288</b>	0.0303	0.2460	0.0273
May-01	<b>0.0267</b>	0.0307	0.2630	0.0260
Aug-01	<b>0.0293</b>	0.0275	0.2850	0.0271
Nov-01	<b>0.0284</b>	0.0281	0.2690	0.0228
Mar-02	<b>0.0307</b>	0.0313	0.2720	0.0245
May-02	<b>0.0281</b>	0.0290	0.2740	0.0279
Jul-02	<b>0.0241</b>	0.0316	0.2580	0.0252
Nov-02	<b>0.0299</b>	0.0298	0.2610	0.0267
Mar-03	<b>0.0318</b>	0.0282	0.2740	0.0253
May-03	<b>0.0281</b>	0.0286	0.2770	0.0249
Aug-03	<b>0.0253</b>	0.0292	0.2490	0.0245
Nov-03	<b>0.0274</b>	0.0097	0.2670	0.0243
Mar-04	<b>0.0266</b>	0.0316	0.2780	0.0249
May-04	<b>0.0244</b>	0.0303	0.2690	0.0241
Aug-04	<b>0.0258</b>	0.0273	0.2810	0.0247
Nov-04	<b>0.0289</b>	0.0281	0.2800	0.0268
Feb-05	<b>0.0310</b>	0.0327	0.2880	0.0253
May-05	<b>0.0309</b>	0.0317	0.2860	0.0248
Aug-05	<b>0.0264</b>	0.0331	0.2740	0.0241

TEST 2  
STATISTICS FOR POND 15S (WMU 3)

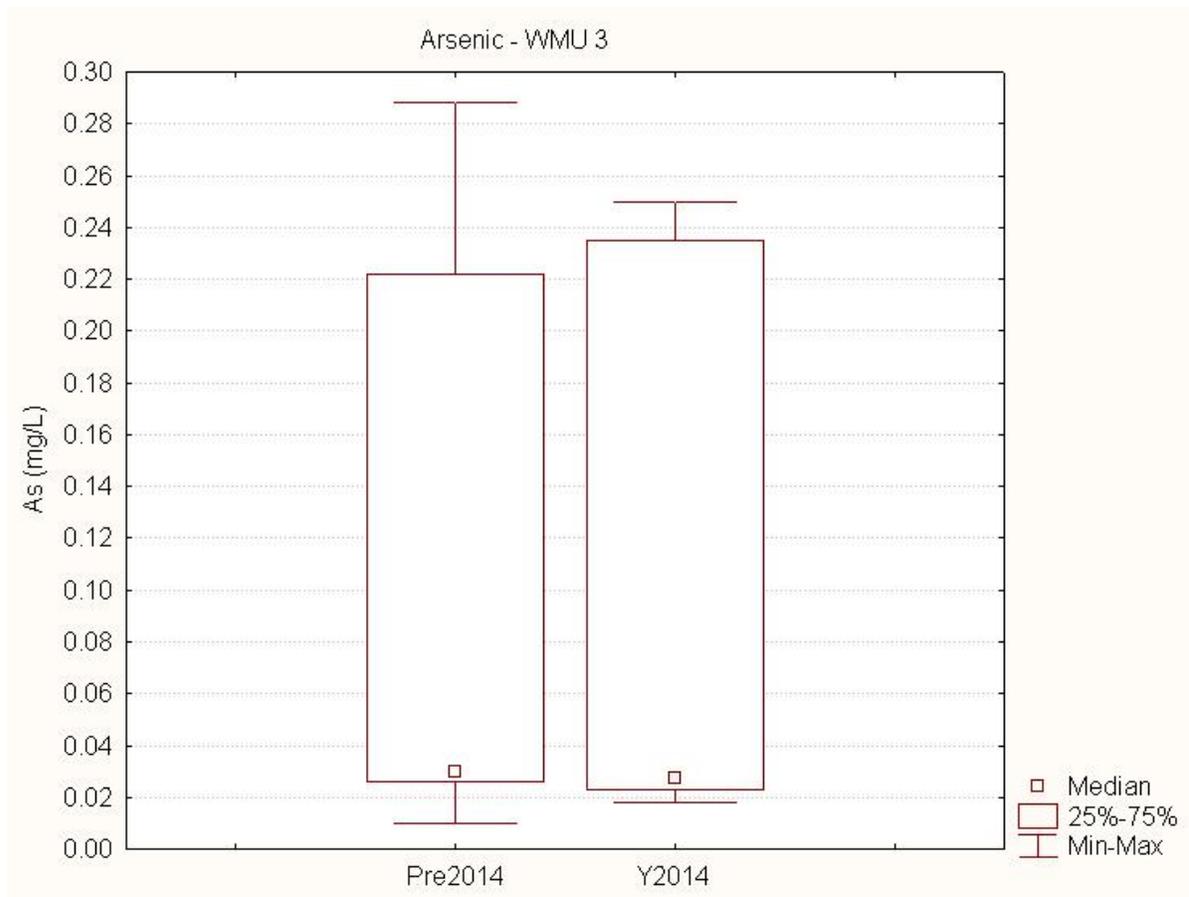
<b>Arsenic</b>				
Date	Upgradient Well	Downgradient Wells		
	Well 165	Well 113	Well 115	Well 166
Nov-05	<b>0.0263</b>	0.0284	0.2700	0.0241
Feb-06	<b>0.0245</b>	0.0295	0.2740	0.0241
May-06	<b>0.0290</b>	0.0282	0.2850	0.0215
Aug-06	<b>0.0305</b>	0.0330	0.2880	0.0278
Nov-06	<b>0.0276</b>	0.0291	0.2800	0.0205
Feb-07	<b>0.0290</b>	0.0275	0.2700	0.0223
May-07	<b>0.0278</b>	0.0266	0.2710	0.0197
Aug-07	<b>0.0231</b>	0.0276	0.2620	0.0228
Nov-07	<b>0.0207</b>	0.0236	0.2380	0.0156
Feb-08	<b>0.0237</b>	0.0283	0.2390	0.0208
May-08	<b>0.0261</b>	0.0211	0.2420	U
Aug-08	<b>0.0245</b>	0.0283	0.2690	0.0218
Nov-08	<b>0.0261</b>	0.0267	0.2510	0.0200
Feb-09	<b>0.0274</b>	0.0271	0.2560	0.0210
May-09	<b>0.0266</b>	0.0245	0.2350	0.0213
Aug-09	<b>0.0281</b>	0.0279	0.2550	0.0199
Nov-09	<b>0.0300</b>	0.0304	0.2630	0.0239
Feb-10	<b>0.0281</b>	0.0296	0.2630	0.0217
Apr-10	<b>0.0295</b>	0.0343	0.2570	0.0247
Jul-10	<b>0.0251</b>	0.0296	0.2640	0.0201
Nov-10	<b>0.0256</b>	0.0266	0.2390	0.0186
Mar-11	<b>0.0234</b>	0.0264	0.2490	0.0188
Apr-11	<b>0.0272</b>	0.0300	0.2480	0.0220
Aug-11	<b>0.0270</b>	0.0310	0.2700	0.0200
Nov-11	<b>0.0280</b>	0.0270	0.2400	0.0180
Feb-12	<b>0.0201</b>	0.0213	0.1870	0.0130
May-12	<b>0.0238</b>	0.0243	0.2200	0.0178
Aug-12	<b>0.0210</b>	0.0250	0.2200	0.0170
Oct-12	<b>0.0250</b>	0.0260	0.2400	0.0180
Feb-13	<b>0.0260</b>	0.0270	0.2300	0.0180
May-13	<b>0.0250</b>	0.0290	0.2500	0.0200
Jul-13	<b>0.0230</b>	0.0290	0.2500	0.0200
Nov-13	<b>0.0280</b>	0.0300	0.2700	0.0200
Feb-14	<i>0.0240</i>	<i>0.0270</i>	<i>0.2400</i>	<i>0.0180</i>
Apr-14	<i>0.0250</i>	<i>0.0270</i>	<i>0.2400</i>	<i>0.0190</i>
Jul-14	<i>0.0230</i>	<i>0.0280</i>	<i>0.2500</i>	<i>0.0190</i>
Nov-14	<i>0.0240</i>	<i>0.0270</i>	<i>0.2300</i>	<i>0.0180</i>
<b>Test 2 Results</b>				
	<b>Well 165</b>	Well 113	Well 115	Well 166
Pre-2014 Mean	<b>0.0272</b>	0.0291	0.2371	0.0234
2014 Mean	<b>0.0240</b>	0.0273	0.2400	0.0185
<b>1991-2014 Statistical Summary</b>				
Mean	<b>0.0271</b>	0.0291	0.2372	0.0232
Median	<b>0.0274</b>	0.0290	0.2440	0.0240
Standard Deviation	<b>0.0032</b>	0.0040	0.0357	0.0038
Kurtosis	<b>1.1982</b>	5.5577	-0.0065	-0.3439
Skewness	<b>-0.3859</b>	-0.9040	-0.7871	-0.1065
Minimum	<b>0.0165</b>	0.0097	0.1314	0.0130
Maximum	<b>0.0360</b>	0.0394	0.2880	0.0320
Count	<b>76</b>	92	94	75
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set. N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics. All concentrations in mg/l.				

# WMU 3 TEST 3 ARSENIC

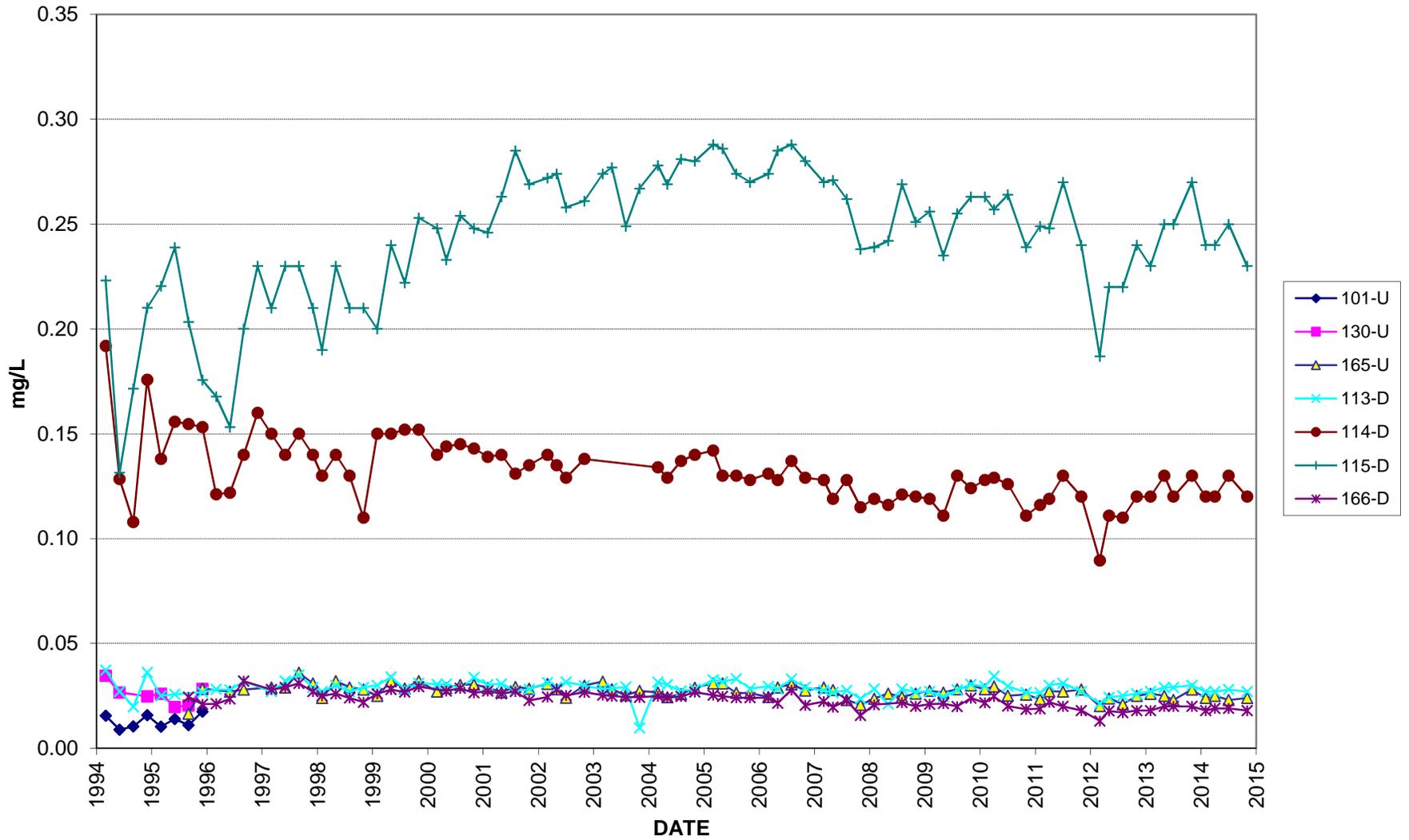
## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Pre-2014	249	0.030	32776.5	1336.5	0.62	0.54
Year 2014	12	0.028	1414.5			

**Summary:** For downgradient wells, the median of Pre-2014 arsenic concentration is not significantly different from the median of Year 2014 arsenic concentration.



### Arsenic in Groundwater (WMU 3)

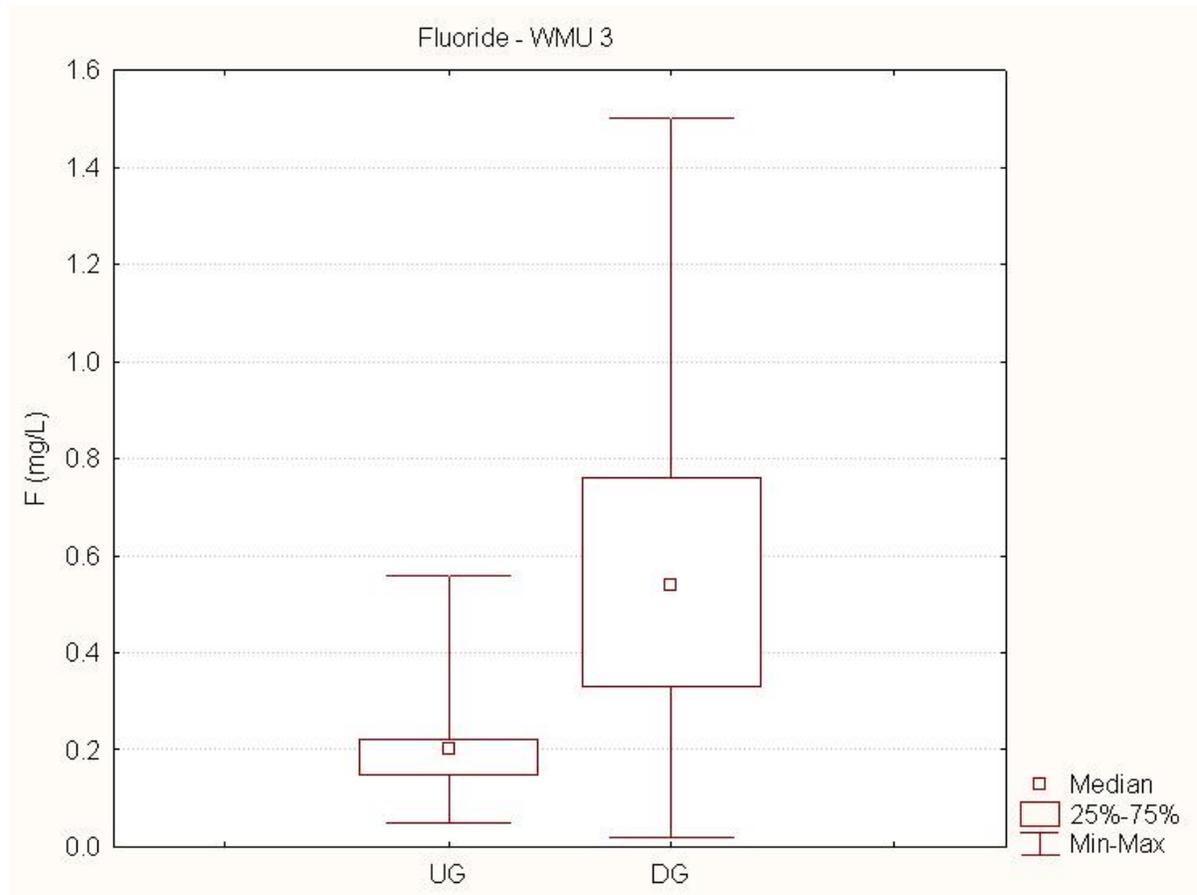


# WMU 3 TEST 1 FLUORIDE

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	69	0.200	4207.5	1792.5	-9.55	<0.0001
Downgradient	219	0.54	37408.5			

**Summary:** The median fluoride concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR POND 15S (WMU 3)

<b>Fluoride</b>				
<u>Date</u>	<b>Upgradient Well</b>	<b>Downgradient Wells</b>		
	<u>Well 165</u>	<u>Well 113</u>	<u>Well 115</u>	<u>Well 166</u>
Sep-91	N.S.	0.800	0.200	N.S.
Dec-91	N.S.	0.960	0.200	N.S.
Mar-92	N.S.	1.000	0.200	N.S.
Jun-92	N.S.	0.772	0.110	N.S.
Sep-92	N.S.	0.770	0.131	N.S.
Dec-92	N.S.	0.800	0.100	N.S.
Mar-93	N.S.	0.800	0.200	N.S.
Jun-93	N.S.	0.800	0.200	N.S.
Sep-93	N.S.	0.800	U	N.S.
Dec-93	N.S.	0.700	U	N.S.
Mar-94	N.S.	0.800	U	N.S.
Jun-94	N.S.	0.760	U	N.S.
Sep-94	N.S.	0.700	U	N.S.
Dec-94	N.S.	0.800	U	N.S.
Mar-95	N.S.	0.764	U	N.S.
Jun-95	N.S.	0.704	U	N.S.
Sep-95	<b>0.300</b>	0.848	U	0.870
Dec-95	<b>0.242</b>	0.612	U	0.802
Mar-96	U	U	U	U
Jun-96	<b>0.242</b>	0.736	0.158	1.030
Sep-96	U	U	U	U
Dec-96	<b>0.160</b>	0.620	0.240	0.780
Mar-97	<b>0.150</b>	0.540	U	0.830
Jun-97	<b>0.150</b>	0.620	U	0.770
Sep-97	U	0.550	U	0.890
Dec-97	U	0.540	U	0.820
Feb-98	<b>0.140</b>	0.560	U	0.950
May-98	<b>0.170</b>	0.530	U	0.930
Aug-98	<b>0.160</b>	0.530	U	0.850
Nov-98	<b>0.170</b>	0.570	U	0.950
Feb-99	<b>0.180</b>	0.540	0.100	1.020
May-99	U	0.500	0.100	0.910
Aug-99	<b>0.100</b>	0.550	U	0.970
Nov-99	U	U	U	U
Mar-00	<b>0.11</b>	0.56	U	0.89
May-00	U	U	U	U
Aug-00	<b>0.12</b>	0.41	U	0.91
Nov-00	<b>0.23</b>	0.52	U	0.9
Feb-01	<b>0.11</b>	0.46	U	0.79
May-01	<b>0.05</b>	0.47	U	0.8
Aug-01	U	0.32	U	0.57
Nov-01	<b>0.19</b>	0.46	U	0.63
Mar-02	<b>0.11</b>	0.44	0.14	0.84
May-02	<b>0.27</b>	0.48	N.S.	0.84
Jul-02	<b>0.09</b>	0.51	N.S.	0.76
Nov-02	<b>0.22</b>	0.68	U	0.98
Mar-03	<b>0.25</b>	0.56	U	0.95
May-03	<b>0.3</b>	0.48	U	0.78
Aug-03	U	0.6	U	0.69
Nov-03	<b>0.24</b>	0.51	0.020	0.76
Mar-04	<b>0.22</b>	0.5	0.36	0.79
May-04	<b>0.098</b>	0.48	0.091	0.73
Aug-04	<b>0.1</b>	0.49	0.33	0.74
Nov-04	<b>0.32</b>	0.5	1.100	0.76
Mar-05	<b>0.33</b>	0.5	0.29	0.89

TEST 2  
STATISTICS FOR POND 15S (WMU 3)

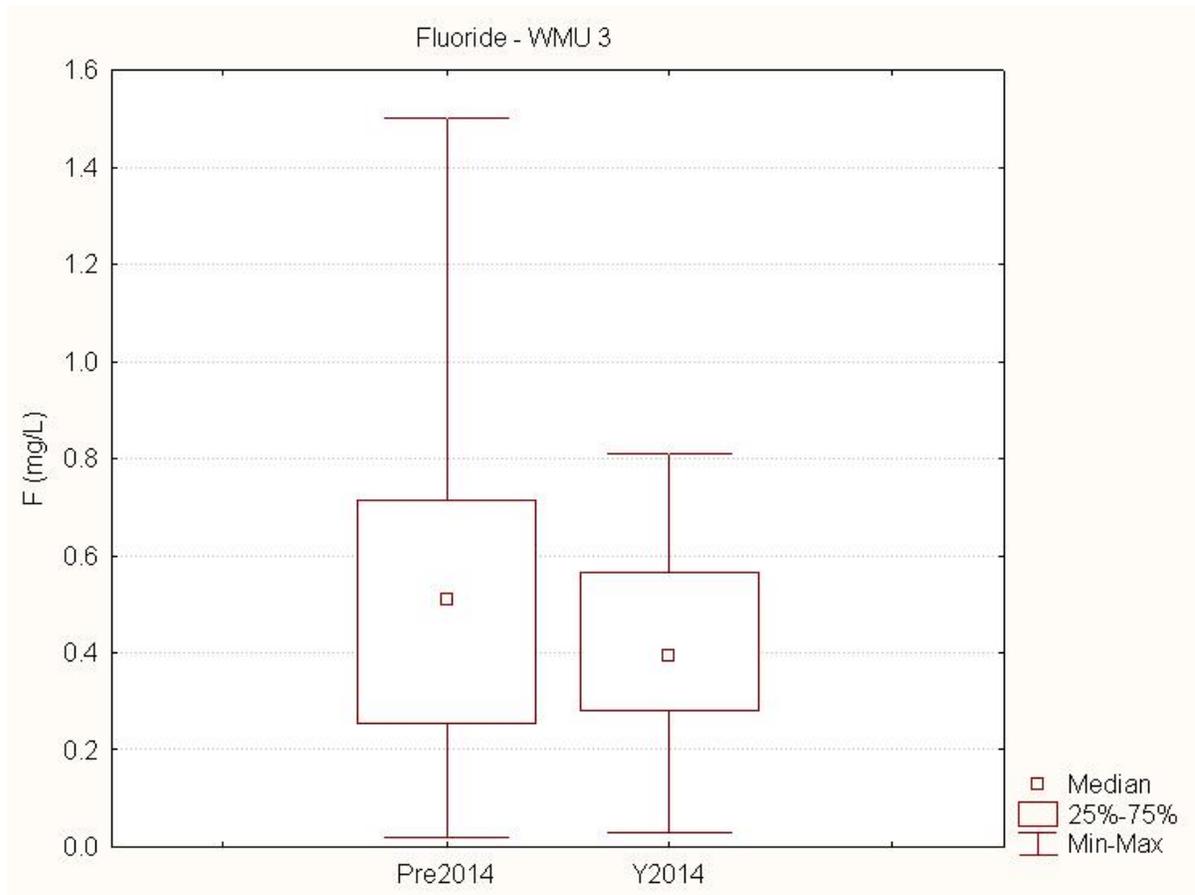
<b>Fluoride</b>				
<u>Date</u>	<u>Upgradient Well</u>	<u>Downgradient Wells</u>		
	<u>Well 165</u>	<u>Well 113</u>	<u>Well 115</u>	<u>Well 166</u>
May-05	<b>0.21</b>	0.56	0.31	0.71
Aug-05	<b>0.061</b>	0.61	0.43	0.87
Nov-05	<b>0.2</b>	0.53	0.3	0.73
Feb-06	<b>0.18</b>	0.48	0.3	0.71
May-06	<b>0.17</b>	0.43	0.23	0.66
Aug-06	<b>0.07</b>	0.45	0.27	0.61
Nov-06	<b>0.15</b>	0.42	0.23	0.64
Feb-07	<b>0.2</b>	0.4	0.18	0.56
May-07	<b>0.2</b>	0.42	0.23	0.62
Aug-07	<b>0.1</b>	0.4	0.2	0.5
Nov-07	<b>0.2</b>	0.4	0.2	0.6
Feb-08	<b>0.4</b>	0.6	0.3	0.8
May-08	<b>0.3</b>	0.5	0.3	0.7
Aug-08	<b>0.2</b>	0.5	0.2	0.6
Nov-08	<b>0.2</b>	0.5	0.2	0.6
Feb-09	<b>0.2</b>	0.6	U	0.8
May-09	<b>0.2</b>	0.5	0.2	0.6
Aug-09	<b>0.2</b>	0.6	0.2	0.8
Nov-09	<b>0.3</b>	0.5	0.2	0.7
Feb-10	<b>0.3</b>	0.5	0.2	0.8
Apr-10	<b>0.2</b>	0.6	0.2	0.8
Jul-10	<b>0.17</b>	0.5	0.19	0.56
Nov-10	<b>0.18</b>	0.46	0.11	0.5
Mar-11	<b>0.32</b>	0.47	0.20	0.79
Apr-11	<b>0.26</b>	0.48	0.22	0.69
Aug-11	<b>0.13</b>	0.43	0.23	0.72
Nov-11	<b>0.22</b>	0.56	0.22	0.55
Feb-12	<b>0.56</b>	1.5	U	1.1
May-12	<b>0.16</b>	0.44	U	0.69
Aug-12	<b>0.2</b>	0.44	0.17	0.61
Oct-12	<b>0.16</b>	0.44	0.14	0.65
Feb-13	<b>0.19</b>	0.46	0.14	0.72
May-13	<b>0.19</b>	0.45	0.13	0.7
Jul-13	<b>0.22</b>	0.48	0.18	0.66
Nov-13	<b>0.11</b>	0.29	0.091	0.28
Feb-14	<b>0.2</b>	<i>0.45</i>	<i>0.21</i>	<i>0.69</i>
Apr-14	<b>0.2</b>	<i>0.29</i>	<i>0.029</i>	<i>0.38</i>
Jul-14	<b>0.12</b>	<i>0.33</i>	<i>0.27</i>	<i>0.41</i>
Nov-14	<b>0.19</b>	<i>0.45</i>	<i>0.81</i>	<i>0.68</i>
<b>Test 2 Results</b>				
	<b>Well 165</b>	<b>Well 113</b>	<b>Well 115</b>	<b>Well 166</b>
Pre-2014 Mean	<b>0.1974</b>	0.5718	0.2194	0.7572
2014 Mean	<b>0.1775</b>	0.3800	0.3298	0.5400
<b>1991-2014 Statistical Summary</b>				
Mean	<b>0.1963</b>	0.5658	0.2271	0.7454
Median	<b>0.2000</b>	0.5100	0.2000	0.7600
Standard Deviation	<b>0.0829</b>	0.1742	0.1649	0.1537
Kurtosis	<b>4.5322</b>	8.4168	16.5165	0.5253
Skewness	<b>1.3985</b>	2.1520	3.6050	-0.3590
Minimum	<b>0.0500</b>	0.2900	0.0200	0.2800
Maximum	<b>0.5600</b>	1.5000	1.1000	1.1000
Count	<b>69</b>	90	55	74
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set. N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics. All concentrations in mg/l.				

# WMU 3 TEST 3 FLUORIDE

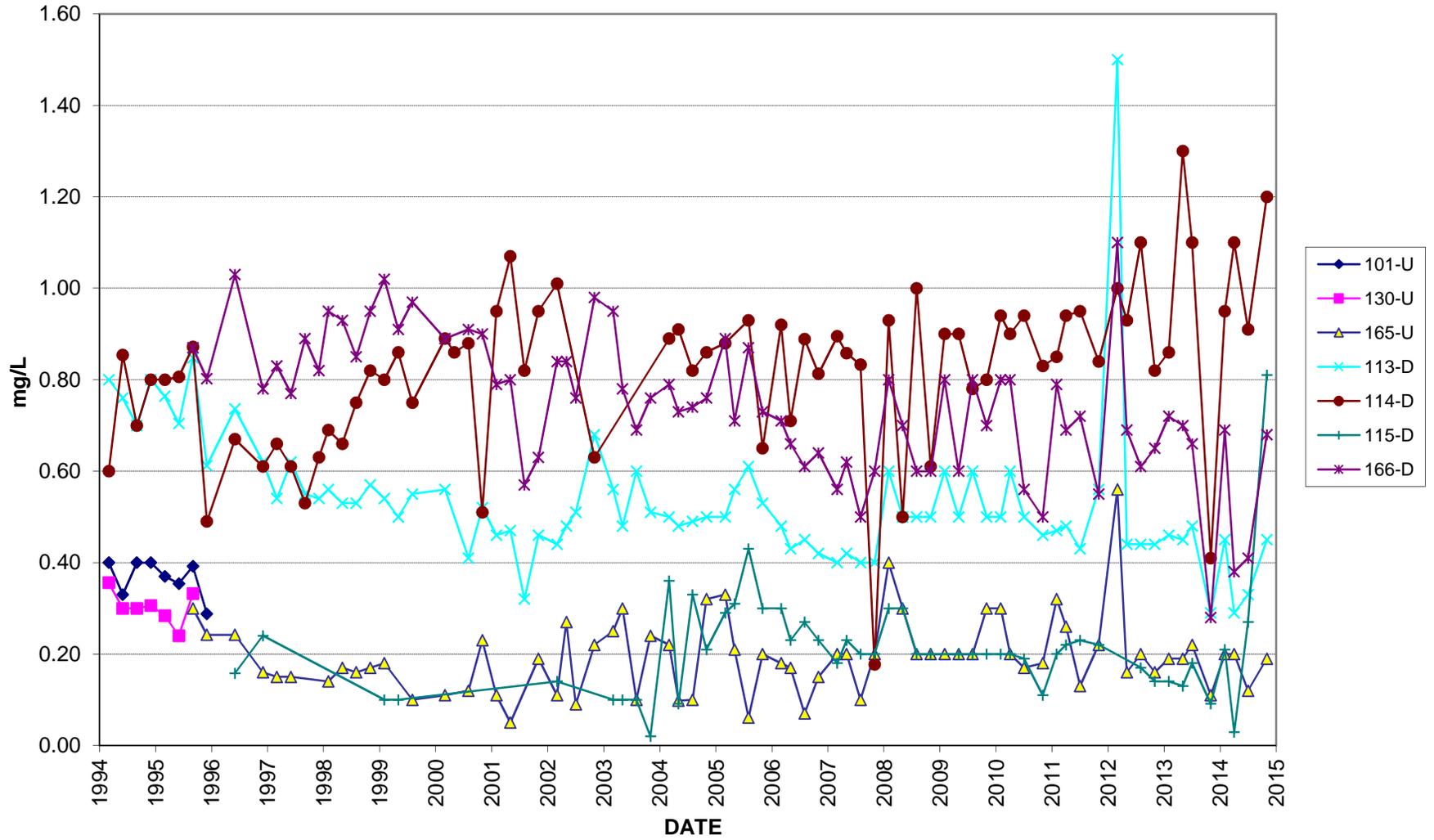
## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Pre-2014	212	0.550	24116.0	1006.0	1.22	0.22
Year 2014	12	0.395	1084.0			

**Summary:** For downgradient wells, the median of Pre-2014 fluoride concentration is not significantly different from the median of Year 2014 fluoride concentration.



### Fluoride in Groundwater (WMU 3)

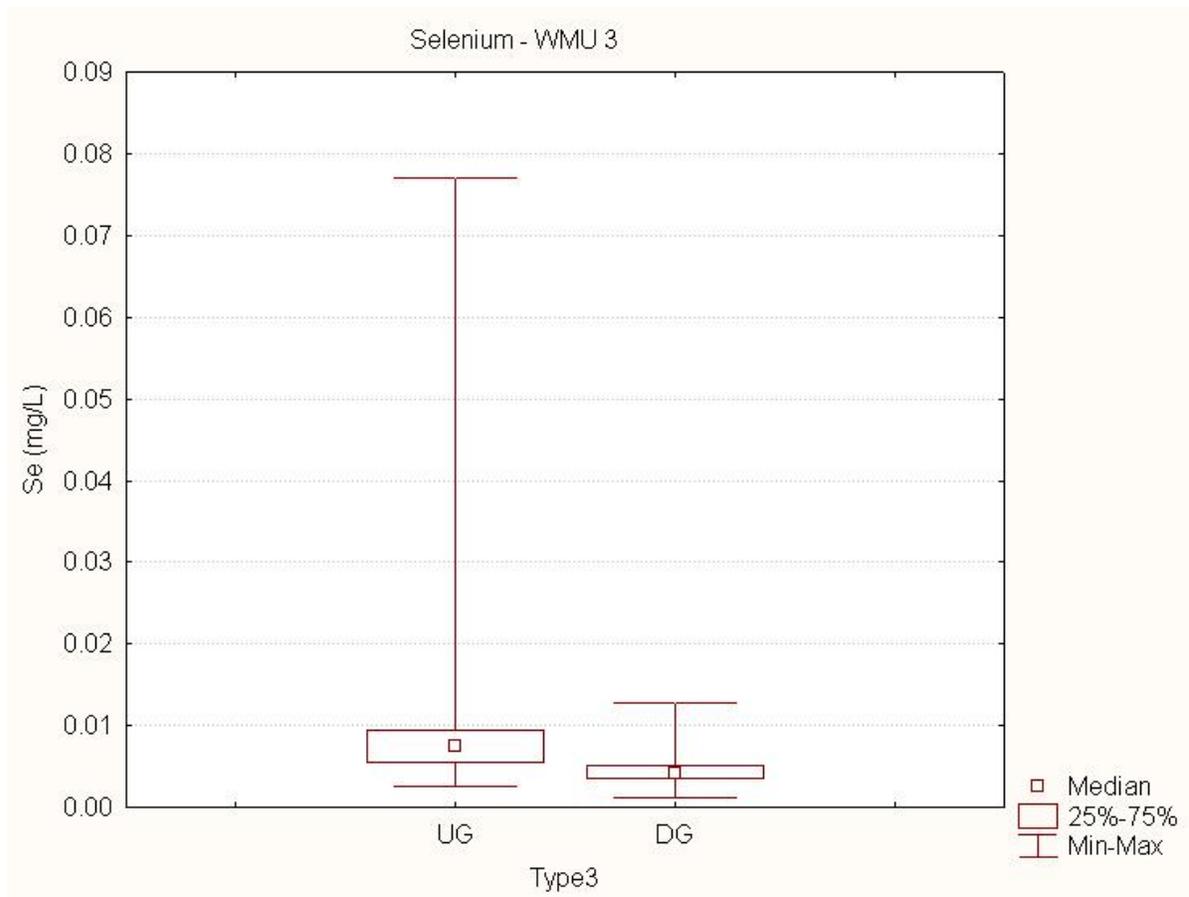


# WMU 3 TEST 1 SELENIUM

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	65	0.0085	11549.5	1515.5	8.55	<0.0001
Downgradient	168	0.0045	15711.5			

**Summary:** The median selenium concentration of downgradient (DG) wells is statistically lower than the median concentration of upgradient (UG) wells.



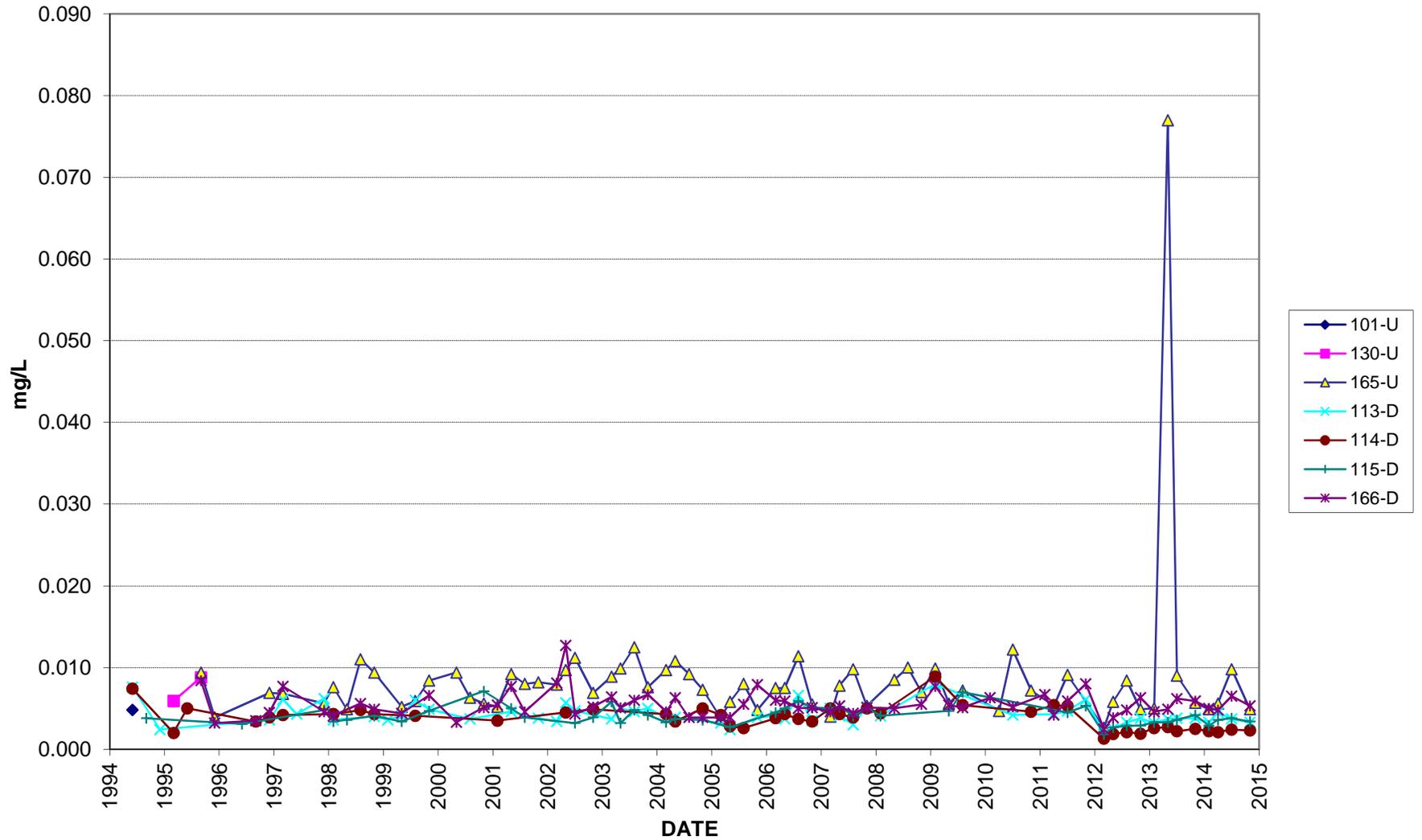
TEST 2  
STATISTICS FOR POND 15S (WMU 3)

<b>Selenium</b>				
<u>Date</u>	<b>Upgradient Well</b>	<b>Downgradient Wells</b>		
	<u>Well 165</u>	<u>Well 113</u>	<u>Well 115</u>	<u>Well 166</u>
Sep-91	N.S.	0.0020	0.0020	N.S.
Dec-91	N.S.	0.0033	0.0029	N.S.
Mar-92	N.S.	0.0020	0.0020	N.S.
Jun-92	N.S.	U	U	N.S.
Sep-92	N.S.	U	U	N.S.
Dec-92	N.S.	U	0.0079	N.S.
Mar-93	N.S.	0.0047	0.0032	N.S.
Jun-93	N.S.	0.0013	0.0011	N.S.
Sep-93	N.S.	0.0023	0.0033	N.S.
Dec-93	N.S.	U	U	N.S.
Mar-94	N.S.	U	U	N.S.
Jun-94	N.S.	0.0076	U	N.S.
Sep-94	N.S.	U	0.0038	N.S.
Dec-94	N.S.	0.0024	U	N.S.
Mar-95	N.S.	U	U	N.S.
Jun-95	N.S.	U	U	N.S.
Sep-95	<b>0.0094</b>	U	U	0.0084
Dec-95	<b>0.0039</b>	U	0.0033	0.0032
Mar-96	U	U	U	U
Jun-96	U	U	0.0031	U
Sep-96	U	U	U	0.0035
Dec-96	<b>0.0069</b>	0.0036	U	0.0045
Mar-97	<b>0.0068</b>	0.0061	U	0.0077
Jun-97	U	0.0043	U	U
Sep-97	U	U	U	U
Dec-97	<b>0.0056</b>	0.0062	0.0048	0.0046
Feb-98	<b>0.0076</b>	0.0036	0.0034	0.0041
May-98	<b>0.0049</b>	U	0.0036	U
Aug-98	<b>0.0110</b>	U	U	0.0056
Nov-98	<b>0.0094</b>	0.0040	0.0041	0.0049
Feb-99	U	0.0036	U	U
May-99	<b>0.0052</b>	0.0041	0.0034	0.0044
Aug-99	<b>0.0059</b>	0.0060	U	U
Nov-99	<b>0.0084</b>	0.0049	0.0047	0.0066
Mar-00	U	U	U	U
May-00	<b>0.0094</b>	U	U	0.0033
Aug-00	<b>0.0063</b>	0.0037	U	U
Nov-00	<b>0.0056</b>	U	0.0071	0.0051
Feb-01	<b>0.0052</b>	U	U	0.0054
May-01	<b>0.0092</b>	0.0046	0.0050	0.0077
Aug-01	<b>0.0080</b>	U	0.0039	0.0046
Nov-01	<b>0.0082</b>	0.0038	U	U
Mar-02	<b>0.0079</b>	0.0034	U	0.0081
May-02	<b>0.0097</b>	0.0057	U	0.0127
Jul-02	<b>0.0112</b>	0.0047	0.0032	0.0043
Nov-02	<b>0.0069</b>	U	0.0039	0.0052
Mar-03	U	0.0037	U	U
May-03	<b>0.0099</b>	U	0.0032	0.0051
Aug-03	<b>0.0125</b>	0.0046	0.0048	0.0060
Nov-03	<b>0.0076</b>	U	0.0042	0.0067
Mar-04	<b>0.0097</b>	0.0038	0.0033	0.0046
May-04	<b>0.0108</b>	0.0039	0.0037	0.0063
Aug-04	<b>0.0092</b>	U	U	0.0039
Nov-04	<b>0.0073</b>	U	0.0036	0.0039
Mar-05	<b>0.0038</b>	0.0032	U	0.0039
May-05	<b>0.0058</b>	0.0024	0.0027	0.0039

TEST 2  
STATISTICS FOR POND 15S (WMU 3)

<b>Selenium</b>				
<u>Date</u>	<b>Upgradient Well</b>	<b>Downgradient Wells</b>		
	<u>Well 165</u>	<u>Well 113</u>	<u>Well 115</u>	<u>Well 166</u>
Aug-05	<b>0.0080</b>	U	U	0.0055
Nov-05	<b>0.0048</b>	0.0039	U	0.0079
Feb-06	<b>0.0075</b>	0.0041	0.0045	0.0060
May-06	<b>0.0075</b>	0.0037	U	0.0059
Aug-06	<b>0.0114</b>	0.0066	0.0059	0.0050
Nov-06	<b>0.0055</b>	0.0035	0.0051	0.0051
Feb-07	<b>0.0040</b>	U	U	0.0046
May-07	<b>0.0078</b>	0.0041	0.0052	0.0053
Aug-07	<b>0.0098</b>	0.0030	0.0041	0.0044
Nov-07	<b>0.0053</b>	0.0052	U	0.0051
Feb-08	U	0.0041	0.0041	U
May-08	<b>0.0085</b>	U	U	0.0050
Aug-08	<b>0.0100</b>	U	U	U
Nov-08	<b>0.0070</b>	U	U	0.0055
Feb-09	<b>0.0099</b>	0.0080	U	0.0077
May-09	<b>0.0056</b>	U	0.0047	0.0054
Aug-09	<b>0.0072</b>	U	0.0070	0.0051
Nov-09	U	U	U	U
Feb-10	U	U	U	0.0063
Apr-10	<b>0.0047</b>	U	U	U
Jul-10	<b>0.0122</b>	0.0042	U	0.0052
Nov-10	<b>0.0072</b>	U	U	U
Mar-11	U	U	U	0.0067
Apr-11	<b>0.0053</b>	0.0043	U	0.0042
Aug-11	<b>0.0091</b>	0.0047	0.0045	0.0059
Nov-11	U	0.0061	0.0053	0.0080
Feb-12	<b>0.0027</b>	0.0019	0.0019	0.0025
May-12	<b>0.0058</b>	0.0025	0.0027	0.0039
Aug-12	<b>0.0084</b>	0.0033	0.0029	0.0048
Oct-12	<b>0.0049</b>	0.0038	0.0029	0.0063
Feb-13	<b>0.0050</b>	0.0032	0.0033	0.0046
May-13	<b>0.0770</b>	0.0037	0.0033	0.0049
Jul-13	<b>0.0090</b>	0.0038	0.0036	0.0062
Nov-13	<b>0.0057</b>	0.0037	0.0042	0.0059
Feb-14	<i>0.0049</i>	<i>0.0033</i>	<i>0.0029</i>	<i>0.0050</i>
Apr-14	<i>0.0056</i>	<i>0.0045</i>	<i>0.0036</i>	<i>0.0048</i>
Jul-14	<i>0.0098</i>	<i>0.0037</i>	<i>0.0038</i>	<i>0.0065</i>
Nov-14	<i>0.0049</i>	<i>0.0033</i>	<i>0.0034</i>	<i>0.0053</i>
<b>Test 2 Results</b>				
	<b>Well 165</b>	Well 113	Well 115	Well 166
Pre-2014 Mean	<b>0.0086</b>	0.0041	0.0039	0.0055
2014 Mean	<b>0.0063</b>	0.0037	0.0034	0.0054
<b>1991-2014 Statistical Summary</b>				
Mean	<b>0.0085</b>	0.0040	0.0039	0.0055
Median	<b>0.0075</b>	0.0038	0.0036	0.0051
Standard Deviation	<b>0.0089</b>	0.0013	0.0013	0.0016
Kurtosis	<b>56.5680</b>	1.2598	1.8685	5.9401
Skewness	<b>7.2802</b>	0.8014	0.9476	1.7111
Minimum	<b>0.0027</b>	0.0013	0.0011	0.0025
Maximum	<b>0.0770</b>	0.0080	0.0079	0.0127
Count	<b>65</b>	56	50	62
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set. N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics. All concentrations in mg/l.				

### Selenium in Groundwater (WMU 3)



# **SLAG PIT WASTE WATER COLLECTION SUMP**

## **Waste Management Unit 5**

**Note:**

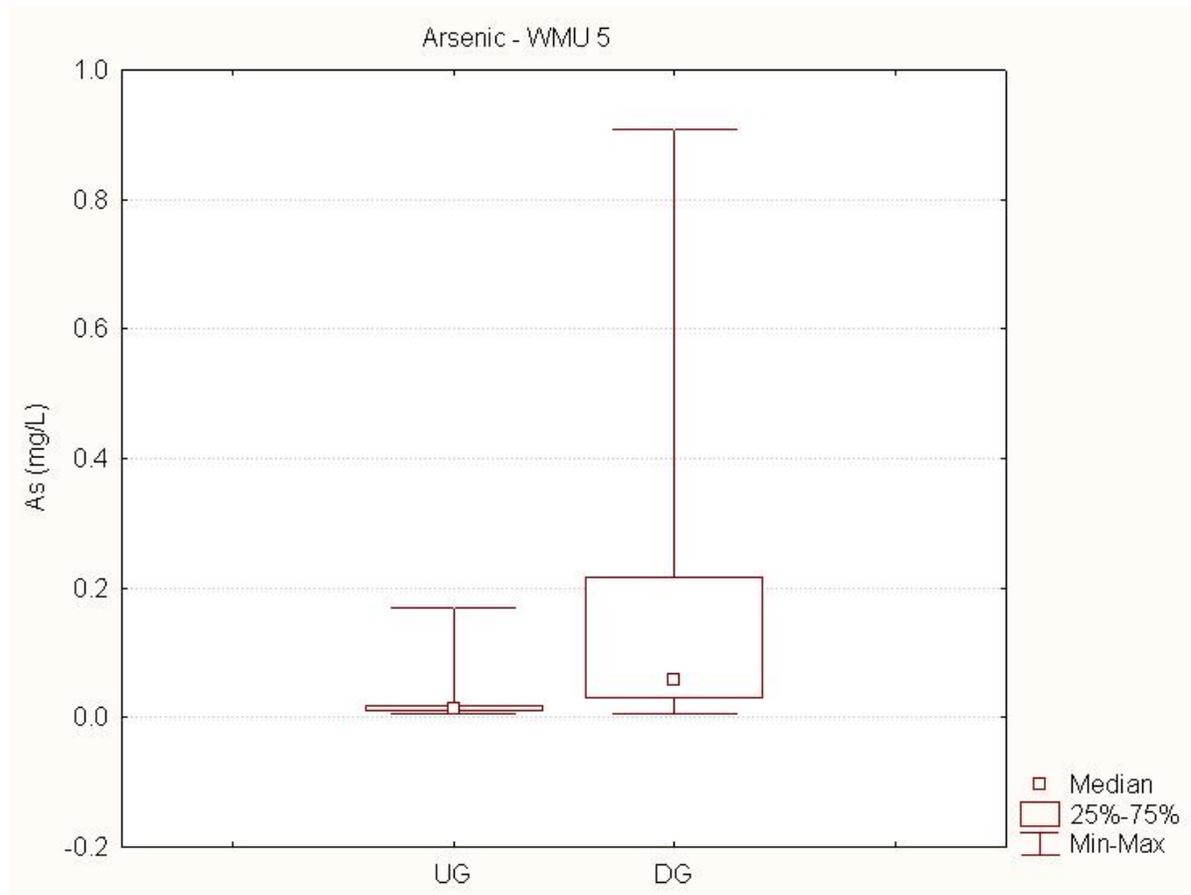
- 1. Time series plot scales are variable depending on the concentrations.**
- 2. Undetected values are not plotted on time series plots**

# WMU 5 TEST 1 ARSENIC

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	P
Upgradient	91	0.013	5235.5	1049.5	-13.16	<0.0001
Downgradient	281	0.057	64142.5			

**Summary:** The median arsenic concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR SLAG PIT SUMP (WMU 5)

**Arsenic**

<u>Date</u>	<u>Upgradient Well</u>		<u>Downgradient Wells</u>	
	<u>Well 121</u>	<u>Well 108</u>	<u>Well 122</u>	<u>Well 123</u>
Sep-91	<b>0.014</b>	0.034	0.068	0.753
Dec-91	<b>0.015</b>	0.033	0.058	0.536
Mar-92	<b>0.013</b>	0.033	0.080	0.541
Jun-92	<b>U</b>	<b>U</b>	0.098	0.909
Sep-92	<b>0.170</b>	0.028	0.031	0.574
Dec-92	<b>0.022</b>	0.025	0.072	0.593
Mar-93	<b>0.021</b>	0.043	0.073	0.470
Jun-93	<b>0.020</b>	0.042	0.052	0.449
Sep-93	<b>0.021</b>	0.046	0.032	0.056
Dec-93	<b>0.010</b>	0.028	0.058	0.481
Mar-94	<b>0.013</b>	0.033	0.064	0.474
Jun-94	<b>0.020</b>	0.033	0.019	0.007
Sep-94	<b>0.018</b>	0.041	0.039	0.408
Dec-94	<b>0.020</b>	0.043	0.061	0.499
Mar-95	<b>0.021</b>	0.044	0.037	0.485
Jun-95	<b>0.019</b>	0.050	0.023	0.644
Sep-95	<b>0.020</b>	0.047	0.034	0.385
Dec-95	<b>0.029</b>	0.065	0.041	0.505
Mar-96	<b>0.018</b>	0.038	0.037	0.408
Jun-96	<b>0.017</b>	0.033	0.037	0.414
Sep-96	<b>0.021</b>	0.049	0.054	0.530
Dec-96	<b>0.017</b>	0.046	0.055	0.510
Mar-97	<b>0.016</b>	0.045	0.045	0.430
Jun-97	<b>0.014</b>	0.047	0.044	0.430
Sep-97	<b>0.014</b>	0.028	0.040	0.400
Dec-97	<b>U</b>	0.038	0.044	0.410
Feb-98	<b>0.022</b>	0.044	0.047	0.400
May-98	<b>0.022</b>	0.043	0.045	0.380
Aug-98	<b>0.019</b>	0.034	0.042	0.380
Nov-98	<b>0.015</b>	0.030	0.040	0.400
Feb-99	<b>0.019</b>	0.029	0.041	0.350
May-99	<b>0.022</b>	0.032	0.040	0.360
Aug-99	<b>0.0325</b>	0.0307	0.0437	0.390
Nov-99	<b>0.0206</b>	0.0258	0.0399	0.366
Mar-00	<b>0.0197</b>	0.0217	0.045	0.35
May-00	<b>0.0137</b>	0.0184	0.0448	0.333
Aug-00	<b>0.0185</b>	0.0224	0.0479	0.34
Nov-00	<b>0.0141</b>	0.0209	0.0495	0.332
Mar-01	<b>0.0168</b>	0.0187	0.0493	0.303
May-01	<b>0.0148</b>	0.0185	0.0503	0.305
Aug-01	<b>0.0136</b>	0.0171	0.0503	0.286
Nov-01	<b>0.0166</b>	0.0187	0.0614	0.314
Mar-02	<b>0.0125</b>	0.0225	0.0583	0.302
May-02	<b>0.0137</b>	0.0236	0.0606	0.292
Jul-02	<b>0.0134</b>	0.0225	0.0543	0.266
Nov-02	<b>0.0126</b>	0.0234	0.0603	0.298
Mar-03	<b>0.0123</b>	0.0258	0.0612	0.291
May-03	<b>0.0126</b>	0.0259	0.0608	0.306
Aug-03	<b>0.0099</b>	0.0218	0.0576	0.266

TEST 2  
STATISTICS FOR SLAG PIT SUMP (WMU 5)

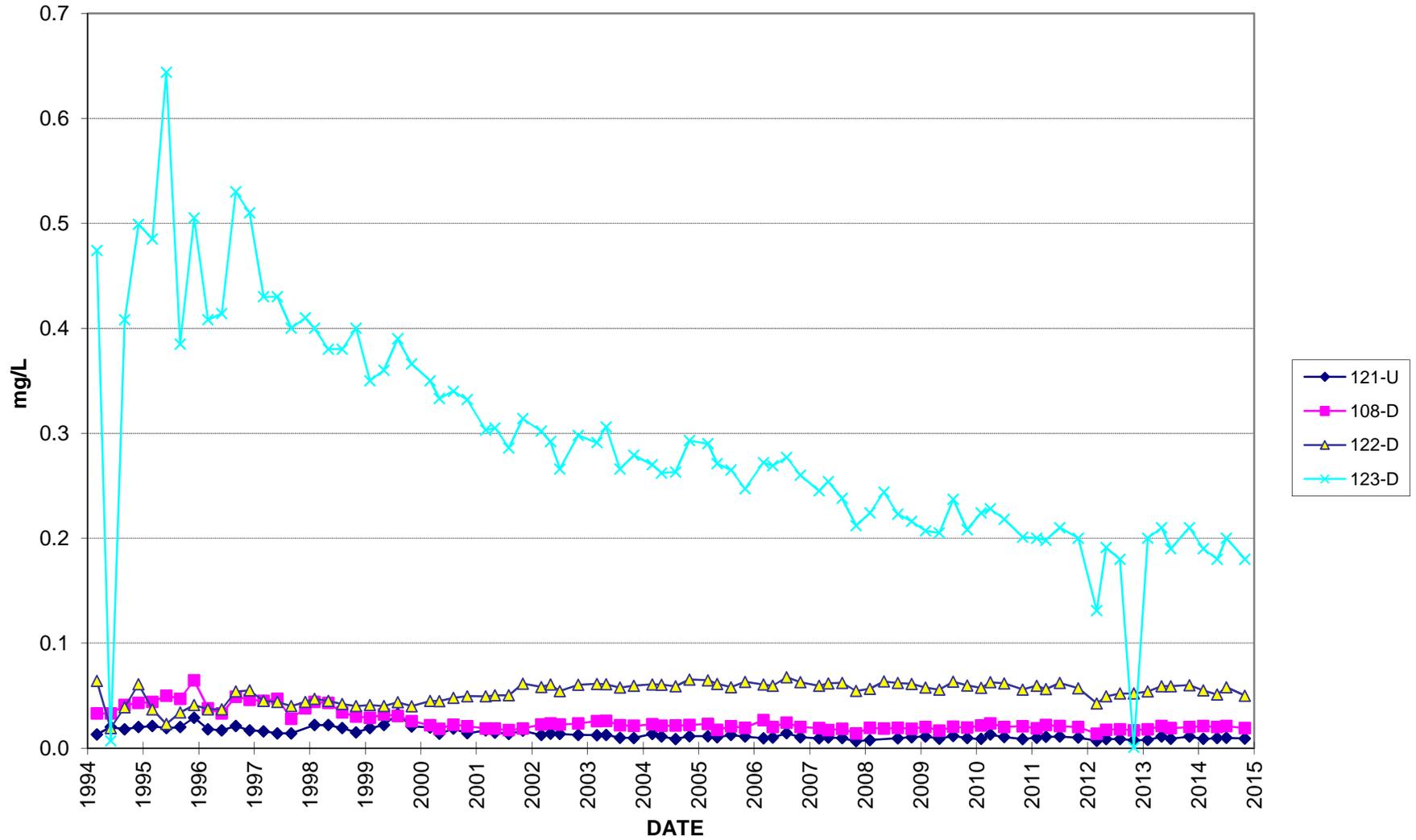
**Arsenic**

<u>Date</u>	<u>Upgradient Well</u>		<u>Downgradient Wells</u>	
	<u>Well 121</u>	<u>Well 108</u>	<u>Well 122</u>	<u>Well 123</u>
Nov-03	<b>0.0096</b>	0.0212	0.0595	0.279
Mar-04	<b>0.0136</b>	0.0227	0.0607	0.27
May-04	<b>0.011</b>	0.0212	0.0604	0.262
Aug-04	<b>0.0087</b>	0.0215	0.0589	0.263
Nov-04	<b>0.0113</b>	0.022	0.0654	0.293
Mar-05	<b>0.0114</b>	0.0231	0.0646	0.29
May-05	<b>0.0104</b>	0.0174	0.0612	0.271
Aug-05	<b>0.0124</b>	0.0208	0.058	0.265
Nov-05	<b>0.011</b>	0.0194	0.0631	0.247
Feb-06	<b>0.0094</b>	0.0266	0.0606	0.272
May-06	<b>0.0101</b>	0.0202	0.0594	0.269
Aug-06	<b>0.0141</b>	0.0242	0.0675	0.277
Nov-06	<b>0.0104</b>	0.02	0.0628	0.26
Feb-07	<b>0.0093</b>	0.0192	0.0594	0.245
May-07	<b>0.0101</b>	0.0172	0.0617	0.254
Aug-07	<b>0.0095</b>	0.0183	0.0622	0.238
Nov-07	<b>0.0066</b>	0.014	0.0545	0.212
Feb-08	<b>0.0077</b>	0.0193	0.0565	0.224
May-08	<b>U</b>	0.0186	0.0635	0.244
Aug-08	<b>0.0094</b>	0.0193	0.062	0.223
Nov-08	<b>0.0104</b>	0.0184	0.0612	0.216
Feb-09	<b>0.0111</b>	0.0202	0.0577	0.207
May-09	<b>0.0089</b>	0.0167	0.0557	0.205
Aug-09	<b>0.0116</b>	0.0203	0.0633	0.237
Nov-09	<b>0.0095</b>	0.0195	0.0597	0.208
Feb-10	<b>0.0088</b>	0.0215	0.0574	0.224
Apr-10	<b>0.0129</b>	0.0234	0.0628	0.228
Jul-10	<b>0.0105</b>	0.0202	0.0617	0.218
Nov-10	<b>0.0086</b>	0.0209	0.0558	0.201
Feb-11	<b>0.0099</b>	0.0188	0.0595	0.200
Apr-11	<b>0.0107</b>	0.0220	0.0562	0.198
Jul-11	<b>0.0110</b>	0.0210	0.0620	0.210
Nov-11	<b>0.0100</b>	0.0200	0.0570	0.200
Feb-12	<b>0.0069</b>	0.0138	0.0426	0.131
May-12	<b>0.0085</b>	0.0174	0.0494	0.191
Aug-12	<b>0.0087</b>	0.0180	0.0520	0.180
Nov-12	<b>0.0074</b>	0.0170	0.0520	0.200
Feb-13	<b>0.0078</b>	0.0180	0.0540	0.200
May-13	<b>0.0110</b>	0.0210	0.0590	0.210
Jul-13	<b>0.0089</b>	0.0190	0.0590	0.190
Nov-13	<b>0.0110</b>	0.0200	0.0600	0.210
Feb-14	<i>0.0088</i>	<i>0.0210</i>	<i>0.0550</i>	<i>0.190</i>
May-14	<i>0.0095</i>	<i>0.0200</i>	<i>0.0510</i>	<i>0.180</i>
Jul-14	<i>0.0098</i>	<i>0.0210</i>	<i>0.0580</i>	<i>0.200</i>
Nov-14	<i>0.0091</i>	<i>0.0190</i>	<i>0.0500</i>	<i>0.180</i>

TEST 2  
STATISTICS FOR SLAG PIT SUMP (WMU 5)

<b>Arsenic</b>				
<u>Date</u>	<b>Upgradient Well</b> <u>Well 121</u>	<u>Well 108</u>	<b>Downgradient Wells</b>	
			<u>Well 122</u>	<u>Well 123</u>
<b>Test 2 Results</b>				
	<b>Well 121</b>	Well 108	Well 122	Well 123
Pre-2014 Mean	<b>0.0157</b>	0.0269	0.0541	0.3259
2014 Mean	<b>0.0093</b>	0.0203	0.0535	0.1875
<b>1991-2014 Statistical Summary</b>				
Mean	<b>0.015</b>	0.027	0.054	0.320
Median	<b>0.013</b>	0.022	0.057	0.283
Standard Deviation	<b>0.017</b>	0.010	0.012	0.142
Kurtosis	<b>75.48</b>	1.25	2.11	2.91
Skewness	<b>8.333</b>	1.338	-0.090	1.272
Minimum	<b>0.007</b>	0.014	0.019	0.007
Maximum	<b>0.170</b>	0.065	0.098	0.909
Count	<b>91</b>	93	94	94
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.                      N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics.                      All concentrations in mg/l.</p>				

### Arsenic in Groundwater (WMU 5)

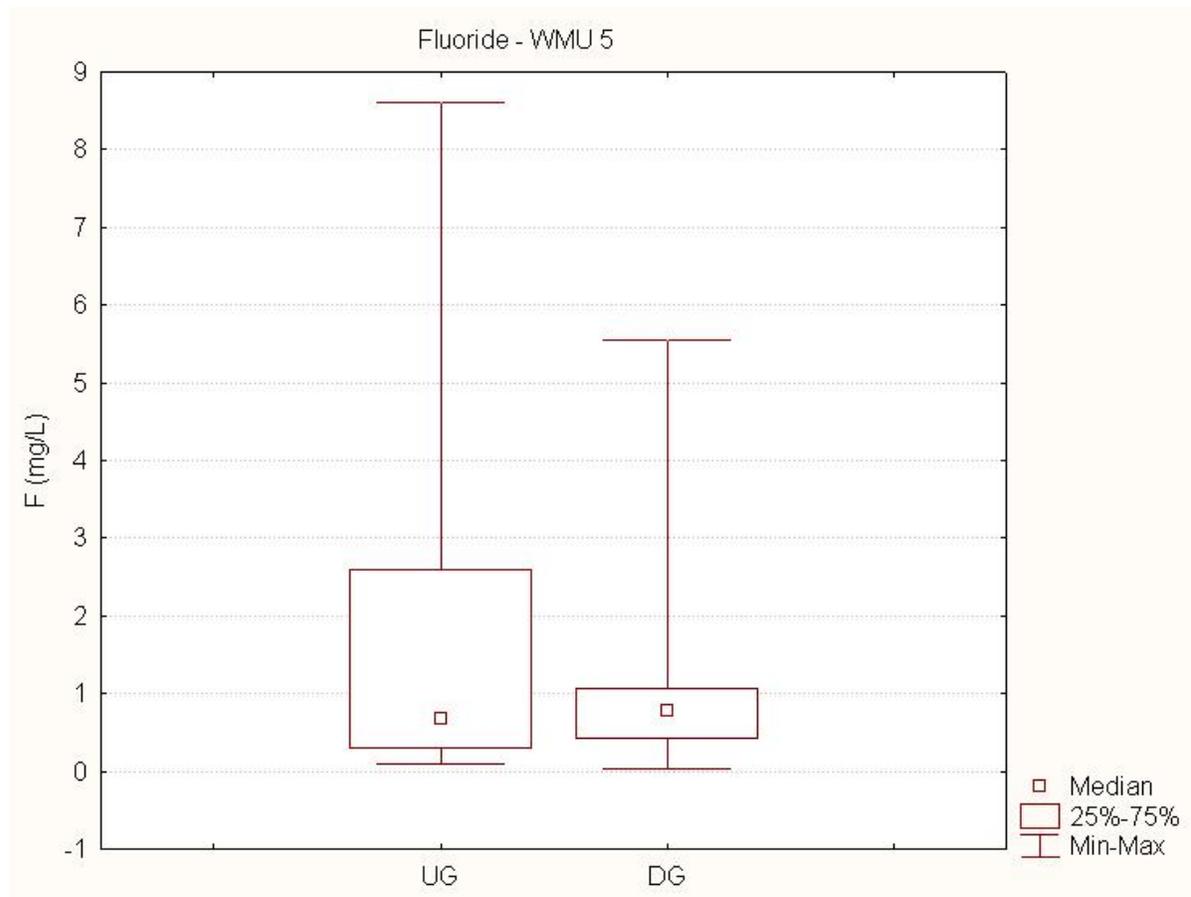


## WMU 5 TEST 1 FLUORIDE

### *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	92	0.68	16808.0	9734.0	1.77	0.076
Downgradient	242	0.79	39137.0			

**Summary:** The median fluoride concentration of downgradient (DG) wells is not statistically different from the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR SLAG PIT SUMP (WMU 5)

**Fluoride**

<u>Date</u>	<u>Upgradient Well</u>		<u>Downgradient Wells</u>	
	<u>Well 121</u>	<u>Well 108</u>	<u>Well 122</u>	<u>Well 123</u>
Sep-91	1.40	3.00	0.20	0.70
Dec-91	1.51	3.25	0.20	0.79
Mar-92	1.02	3.12	0.20	0.97
Jun-92	1.23	2.53	U	0.62
Sep-92	1.21	2.66	U	0.61
Dec-92	1.40	2.50	U	0.70
Mar-93	2.00	2.00	U	0.70
Jun-93	4.50	1.10	1.10	0.70
Sep-93	4.10	2.00	0.20	0.60
Dec-93	2.40	3.30	U	0.90
Mar-94	3.00	2.40	U	0.80
Jun-94	6.10	2.42	2.20	0.90
Sep-94	4.70	3.00	0.50	1.10
Dec-94	3.96	2.70	U	0.80
Mar-95	7.30	1.80	0.50	0.81
Jun-95	8.60	0.70	3.10	0.80
Sep-95	4.58	0.65	1.27	0.93
Dec-95	2.60	0.68	1.07	0.65
Mar-96	3.22	5.56	U	U
Jun-96	3.84	5.26	1.56	0.72
Sep-96	3.00	U	U	U
Dec-96	3.45	1.52	0.15	0.81
Mar-97	3.70	1.21	0.27	0.54
Jun-97	3.42	1.44	0.54	0.56
Sep-97	1.68	1.01	U	0.52
Dec-97	1.36	0.57	U	0.57
Feb-98	3.13	0.47	U	0.57
May-98	2.10	0.83	U	0.58
Aug-98	2.15	0.87	U	0.55
Nov-98	1.62	0.68	U	0.63
Feb-99	1.81	0.76	U	0.67
May-99	2.00	0.87	U	1.40
Aug-99	6.70	1.70	U	0.69
Nov-99	U	U	U	U
Mar-00	4.8	3.2	U	0.69
May-00	4.6	2.4	U	0.36
Aug-00	4.9	2.3	0.11	0.78
Nov-00	4.1	2	U	0.78
Mar-01	3	2.3	U	0.57
May-01	2.6	1.9	0.06	0.67
Aug-01	1.4	0.89	U	0.47
Nov-01	1.4	1.6	0.07	0.77
Mar-02	0.99	0.94	0.13	0.83
May-02	1.1	0.91	U	0.82
Jul-02	1	1.1	0.11	0.81
Nov-02	0.83	0.96	U	0.95
Mar-03	0.68	0.94	U	1
May-03	0.67	1	0.11	0.79
Aug-03	0.58	1.1	U	0.99

TEST 2  
STATISTICS FOR SLAG PIT SUMP (WMU 5)

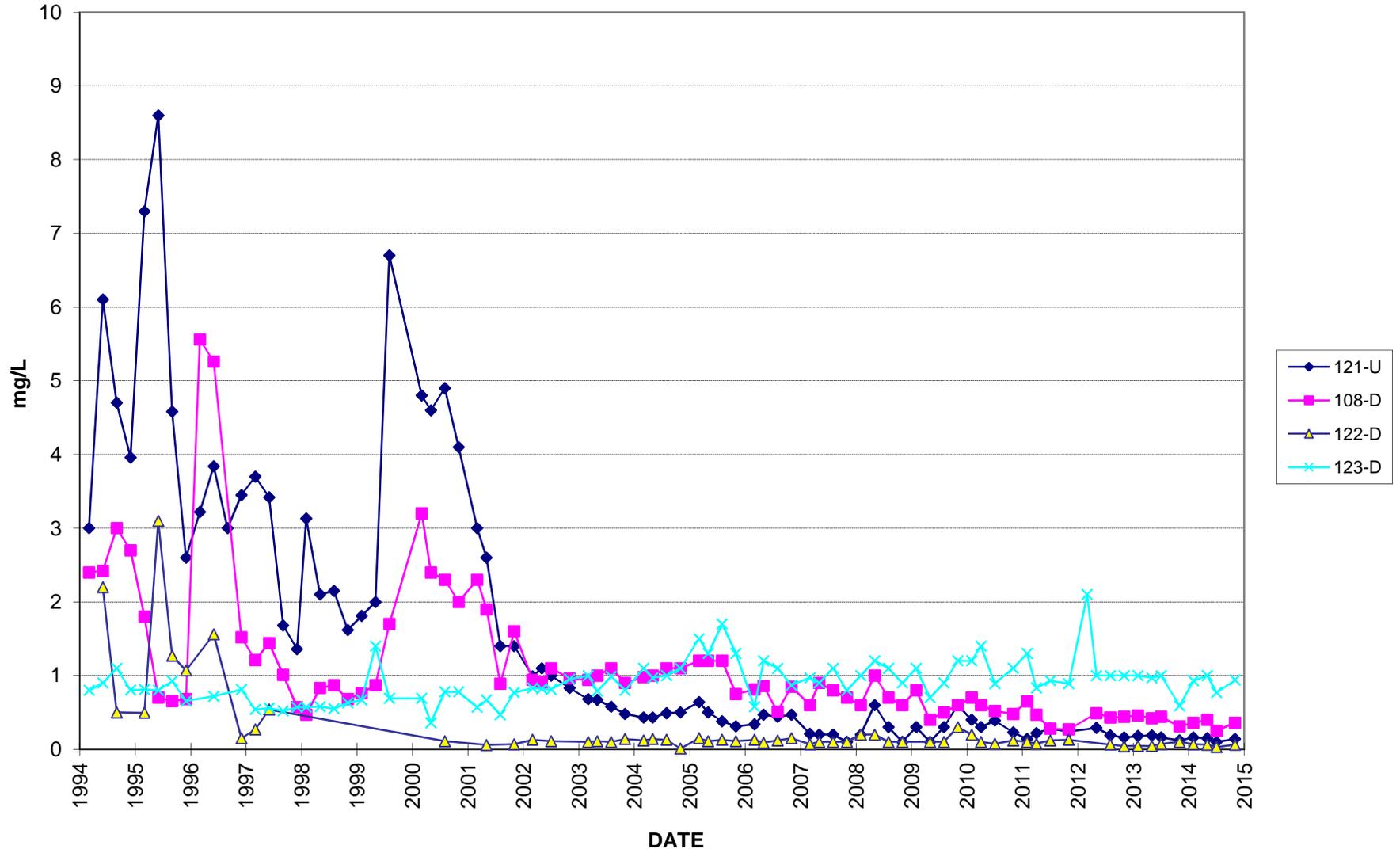
**Fluoride**

<u>Date</u>	<u>Upgradient Well</u>		<u>Downgradient Wells</u>	
	<u>Well 121</u>	<u>Well 108</u>	<u>Well 122</u>	<u>Well 123</u>
Nov-03	<b>0.48</b>	0.9	0.14	0.8
Mar-04	<b>0.43</b>	0.98	0.12	1.1
May-04	<b>0.43</b>	1	0.14	0.97
Aug-04	<b>0.49</b>	1.1	0.13	1
Nov-04	<b>0.5</b>	1.1	U	1.1
Mar-05	<b>0.64</b>	1.2	0.15	1.5
May-05	<b>0.5</b>	1.2	0.11	1.3
Aug-05	<b>0.38</b>	1.2	0.13	1.7
Nov-05	<b>0.31</b>	0.75	0.11	1.3
Feb-06	<b>0.34</b>	0.81	0.13	0.58
May-06	<b>0.47</b>	0.86	0.09	1.2
Aug-06	<b>0.44</b>	0.51	0.12	1.1
Nov-06	<b>0.47</b>	0.85	0.15	0.87
Feb-07	<b>0.21</b>	0.6	0.069	0.97
May-07	<b>0.2</b>	0.9	0.1	0.9
Aug-07	<b>0.2</b>	0.8	0.1	1.1
Nov-07	<b>0.1</b>	0.7	0.1	0.8
Feb-08	<b>0.2</b>	0.6	0.2	1
May-08	<b>0.6</b>	1	0.2	1.2
Aug-08	<b>0.3</b>	0.7	0.1	1.1
Nov-08	<b>0.1</b>	0.6	0.1	0.9
Feb-09	<b>0.3</b>	0.8	U	1.1
May-09	<b>0.1</b>	0.4	0.1	0.7
Aug-09	<b>0.3</b>	0.5	0.1	0.9
Nov-09	<b>0.6</b>	0.6	0.3	1.2
Feb-10	<b>0.4</b>	0.7	0.2	1.2
Apr-10	<b>0.3</b>	0.6	0.1	1.4
Jul-10	<b>0.39</b>	0.52	0.075	0.89
Nov-10	<b>0.23</b>	0.48	0.12	1.1
Feb-11	<b>0.14</b>	0.65	0.10	1.30
Apr-11	<b>0.22</b>	0.47	0.08	0.83
Jul-11	<b>0.28</b>	0.28	0.12	0.93
Nov-11	<b>0.24</b>	0.27	0.13	0.89
Feb-12	U	U	U	2.10
May-12	<b>0.29</b>	0.49	U	1.00
Aug-12	<b>0.19</b>	0.43	0.07	1.00
Nov-12	<b>0.16</b>	0.44	0.04	1.00
Feb-13	<b>0.18</b>	0.46	0.05	1.00
May-13	<b>0.19</b>	0.42	0.04	0.97
Jul-13	<b>0.16</b>	0.44	0.07	1.00
Nov-13	<b>0.12</b>	0.31	U	0.59
Feb-14	<b>0.16</b>	0.36	0.0690	0.930
May-14	<b>0.15</b>	0.40	0.0630	1.000
Jul-14	<b>0.10</b>	0.25	U	0.770
Nov-14	<b>0.14</b>	0.36	0.0630	0.940

## STATISTICS FOR SLAG PIT SUMP (WMU 5)

<b>Fluoride</b>				
<u>Date</u>	<b>Upgradient Well</b> <u>Well 121</u>	<u>Well 108</u>	<b>Downgradient Wells</b>	
			<u>Well 122</u>	<u>Well 123</u>
<b>Test 2 Results</b>	<b>Well 121</b>	Well 108	Well 122	Well 123
Pre-2014 Mean	<b>1.7048</b>	1.3072	0.3127	0.8939
2014 Mean	<b>0.1375</b>	0.3425	0.0650	0.9100
<b>1991-2014 Statistical Summary</b>				
Mean	<b>1.637</b>	1.265	0.300	0.895
Median	<b>0.675</b>	0.900	0.120	0.890
Standard Deviation	<b>1.858</b>	1.027	0.539	0.275
Kurtosis	<b>2.12</b>	4.44	14.36	3.53
Skewness	<b>1.551</b>	1.928	3.625	1.279
Minimum	<b>0.100</b>	0.250	0.042	0.360
Maximum	<b>8.600</b>	5.560	3.100	2.100
Count	<b>92</b>	91	60	91
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set. N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics. All concentrations in mg/l.				

### Fluoride in Groundwater (WMU 5)

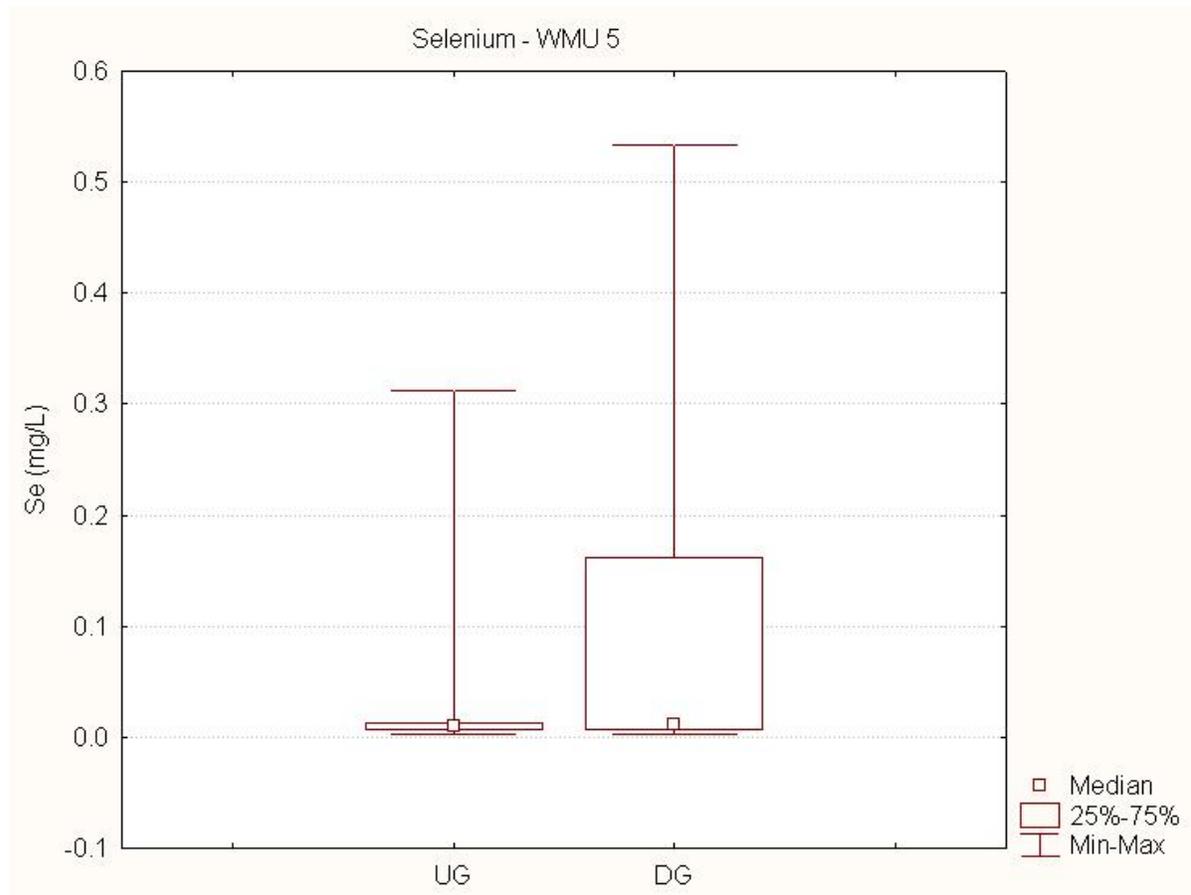


## WMU 5 TEST 1 SELENIUM

### *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	85	0.010	11687.0	8032.0	-2.73	0.007
Downgradient	236	0.011	39994.0			

**Summary:** The median selenium concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR SLAG PIT SUMP (WMU 5)

**Selenium**

<u>Date</u>	<u>Upgradient Well</u>		<u>Downgradient Wells</u>	
	<u>Well 121</u>	<u>Well 108</u>	<u>Well 122</u>	<u>Well 123</u>
Sep-91	<b>0.006</b>	0.004	0.002	0.332
Dec-91	<b>0.002</b>	0.002	0.002	0.311
Mar-92	<b>0.006</b>	0.002	0.004	0.277
Jun-92	<b>0.013</b>	0.008	0.006	0.534
Sep-92	<b>U</b>	0.002	<b>U</b>	0.200
Dec-92	<b>0.312</b>	0.006	0.002	0.412
Mar-93	<b>0.008</b>	0.005	0.003	0.290
Jun-93	<b>0.007</b>	0.004	0.002	0.277
Sep-93	<b>0.006</b>	0.007	<b>U</b>	0.026
Dec-93	<b>U</b>	<b>U</b>	<b>U</b>	0.291
Mar-94	<b>U</b>	<b>U</b>	<b>U</b>	0.248
Jun-94	<b>U</b>	<b>U</b>	<b>U</b>	<b>U</b>
Sep-94	<b>0.006</b>	<b>U</b>	<b>U</b>	0.224
Dec-94	<b>0.025</b>	0.005	<b>U</b>	0.305
Mar-95	<b>U</b>	<b>U</b>	<b>U</b>	0.209
Jun-95	<b>0.004</b>	<b>U</b>	<b>U</b>	0.258
Sep-95	<b>0.012</b>	0.006	0.007	0.214
Dec-95	<b>0.005</b>	0.004	<b>U</b>	0.225
Mar-96	<b>0.007</b>	<b>U</b>	<b>U</b>	0.186
Jun-96	<b>0.005</b>	<b>U</b>	<b>U</b>	0.213
Sep-96	<b>0.007</b>	0.005	<b>U</b>	0.280
Dec-96	<b>0.007</b>	0.005	<b>U</b>	0.270
Mar-97	<b>0.010</b>	<b>U</b>	<b>U</b>	0.230
Jun-97	<b>0.008</b>	<b>U</b>	<b>U</b>	0.220
Sep-97	<b>0.008</b>	<b>U</b>	<b>U</b>	0.230
Dec-97	<b>0.010</b>	0.005	<b>U</b>	0.220
Feb-98	<b>0.011</b>	0.0059	0.0049	0.24
May-98	<b>0.0098</b>	<b>U</b>	<b>U</b>	0.22
Aug-98	<b>0.012</b>	<b>U</b>	<b>U</b>	0.2
Nov-98	<b>0.0077</b>	0.016	0.0077	0.23
Feb-99	<b>U</b>	<b>U</b>	<b>U</b>	0.2
May-99	<b>U</b>	<b>U</b>	<b>U</b>	0.21
Aug-99	<b>0.0092</b>	0.0056	0.0064	0.224
Nov-99	<b>0.0104</b>	0.0086	0.0061	0.209
Mar-00	<b>U</b>	<b>U</b>	<b>U</b>	0.211
May-00	<b>0.0058</b>	0.0057	<b>U</b>	0.202
Aug-00	<b>0.0091</b>	0.007	<b>U</b>	0.204
Nov-00	<b>0.0047</b>	0.0067	<b>U</b>	0.203
Mar-01	<b>0.0065</b>	0.007	0.0044	0.188
May-01	<b>0.0077</b>	0.0062	0.0045	0.193
Aug-01	<b>0.0058</b>	0.0049	<b>U</b>	0.175
Nov-01	<b>0.0082</b>	0.0056	0.0041	0.196
Mar-02	<b>0.0054</b>	0.0058	0.0061	0.184
May-02	<b>0.0082</b>	0.0073	0.0055	0.181
Jul-02	<b>0.0056</b>	0.0062	0.0053	0.167
Nov-02	<b>0.0073</b>	0.0067	0.008	0.189
Mar-03	<b>U</b>	<b>U</b>	<b>U</b>	0.185
May-03	<b>0.0074</b>	0.0076	0.0101	0.191
Aug-03	<b>0.0072</b>	0.0077	0.0079	0.159

TEST 2  
STATISTICS FOR SLAG PIT SUMP (WMU 5)

**Selenium**

<u>Date</u>	<u>Upgradient Well</u>		<u>Downgradient Wells</u>	
	<u>Well 121</u>	<u>Well 108</u>	<u>Well 122</u>	<u>Well 123</u>
Nov-03	<b>0.0067</b>	0.0065	0.0074	0.179
Mar-04	<b>0.0112</b>	0.0097	0.0126	0.172
May-04	<b>0.0093</b>	0.0074	0.0094	0.162
Aug-04	<b>0.0045</b>	0.0057	0.0059	0.166
Nov-04	<b>0.0101</b>	0.0098	0.0085	0.185
Mar-05	<b>0.0087</b>	0.0067	0.011	0.179
May-05	<b>0.0087</b>	0.0055	0.0081	0.167
Aug-05	<b>0.008</b>	0.0077	0.009	0.162
Nov-05	<b>0.0108</b>	0.0076	0.0076	0.158
Feb-06	<b>0.0111</b>	0.0105	0.0088	0.175
May-06	<b>0.0131</b>	0.0086	0.0107	0.173
Aug-06	<b>0.0148</b>	0.0194	0.0122	0.179
Nov-06	<b>0.0119</b>	0.0108	0.0087	0.17
Feb-07	<b>0.0112</b>	0.0091	0.0105	0.158
May-07	<b>0.0129</b>	0.0109	0.01	0.161
Aug-07	<b>0.014</b>	0.0139	0.0096	0.156
Nov-07	<b>0.0101</b>	0.0095	0.0077	0.138
Feb-08	<b>0.0114</b>	0.0092	0.0097	0.152
May-08	<b>0.0126</b>	0.0087	0.0083	0.141
Aug-08	<b>0.011</b>	0.0111	0.008	0.149
Nov-08	<b>0.0134</b>	0.0138	0.009	0.148
Feb-09	<b>0.0116</b>	0.0087	0.0096	0.139
May-09	<b>0.0122</b>	0.0108	0.0092	0.143
Aug-09	<b>0.0145</b>	0.0136	0.0108	0.162
Nov-09	<b>0.0092</b>	0.0081	0.0074	0.142
Feb-10	<b>0.0141</b>	0.0129	0.0074	0.151
Apr-10	<b>0.0134</b>	0.0088	0.0067	0.157
Jul-10	<b>0.0126</b>	0.0141	0.0089	0.150
Nov-10	<b>0.0098</b>	0.0124	0.0091	0.145
Feb-11	<b>0.0132</b>	0.0107	0.0086	0.145
Apr-11	<b>0.0124</b>	0.0113	0.0057	0.140
Jul-11	<b>0.0150</b>	0.0140	0.0110	0.150
Nov-11	<b>0.0150</b>	0.0140	0.0096	0.150
Feb-12	<b>0.0070</b>	0.0056	0.0044	0.065
May-12	<b>0.0098</b>	0.0091	0.0060	0.110
Aug-12	<b>0.0130</b>	0.0120	0.0073	0.120
Nov-12	<b>0.0150</b>	0.0120	0.0074	0.140
Feb-13	<b>0.0130</b>	0.0110	0.0090	0.140
May-13	<b>0.0140</b>	0.0130	0.0093	0.150
Jul-13	<b>0.0130</b>	0.0130	0.0090	0.140
Nov-13	<b>0.0140</b>	0.0120	0.0084	0.150
Feb-14	<i>0.0120</i>	<i>0.0180</i>	<i>0.0085</i>	<i>0.130</i>
May-14	<i>0.0140</i>	<i>0.0110</i>	<i>0.0088</i>	<i>0.130</i>
Jul-14	<i>0.0150</i>	<i>0.0140</i>	<i>0.0098</i>	<i>0.160</i>
Nov-14	<i>0.0120</i>	<i>0.0110</i>	<i>0.0079</i>	<i>0.140</i>

TEST 2  
STATISTICS FOR SLAG PIT SUMP (WMU 5)

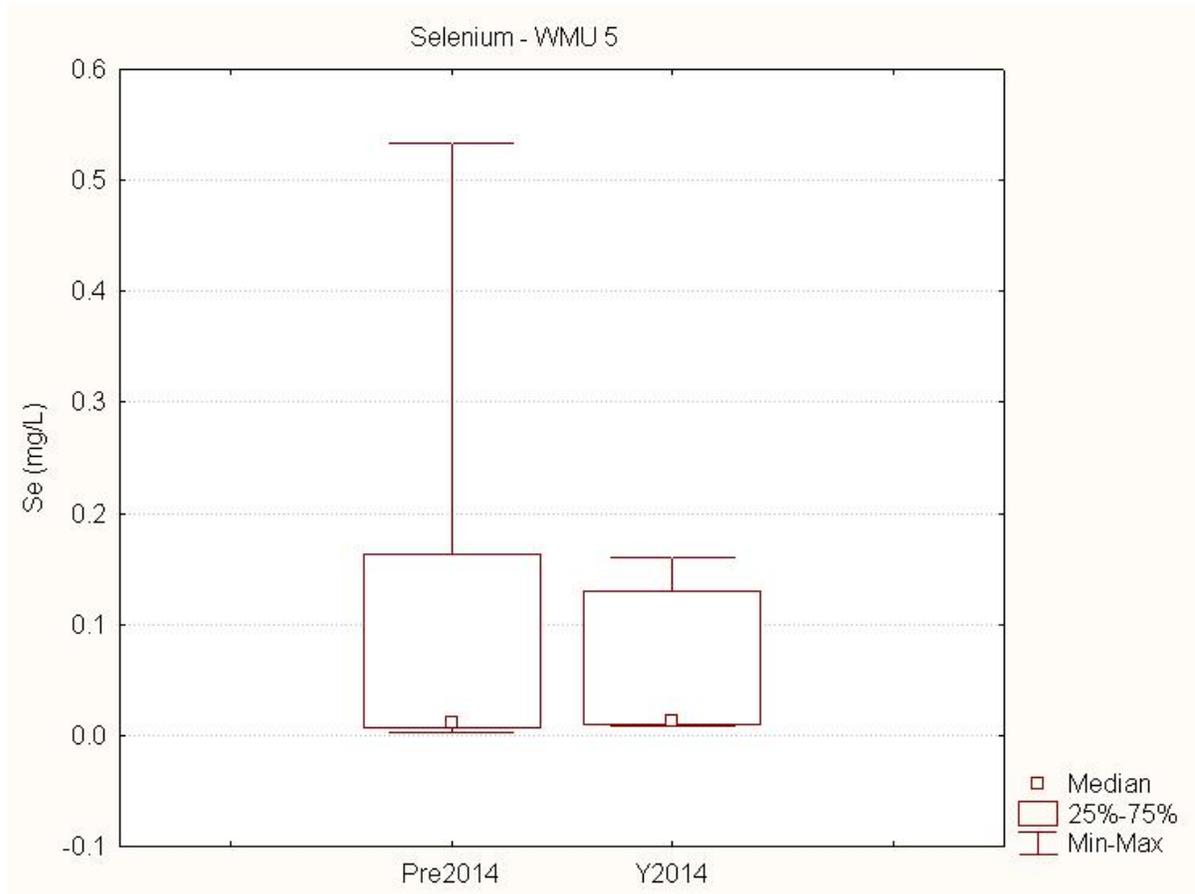
<b>Selenium</b>				
<u>Date</u>	<b>Upgradient Well</b>	<b>Downgradient Wells</b>		
<b>Test 2 Results</b>	<u>Well 121</u>	<u>Well 108</u>	<u>Well 122</u>	<u>Well 123</u>
	<b>Well 121</b>	Well 108	Well 122	Well 123
Pre-2014 Mean	<b>0.0136</b>	0.0085	0.0075	0.1940
2014 Mean	<b>0.0133</b>	0.0135	0.0088	0.1400
<b>1991-2014 Statistical Summary</b>				
Mean	<b>0.014</b>	0.009	0.008	0.192
Median	<b>0.010</b>	0.008	0.008	0.179
Standard Deviation	<b>0.033</b>	0.004	0.002	0.067
Kurtosis	<b>82.95</b>	0.03	0.00	7.86
Skewness	<b>9.055</b>	0.522	-0.580	1.941
Minimum	<b>0.002</b>	0.002	0.002	0.026
Maximum	<b>0.312</b>	0.019	0.013	0.534
Count	<b>85</b>	77	66	93
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set. N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics. All concentrations in mg/l.				

## WMU 5 TEST 3 SELENIUM

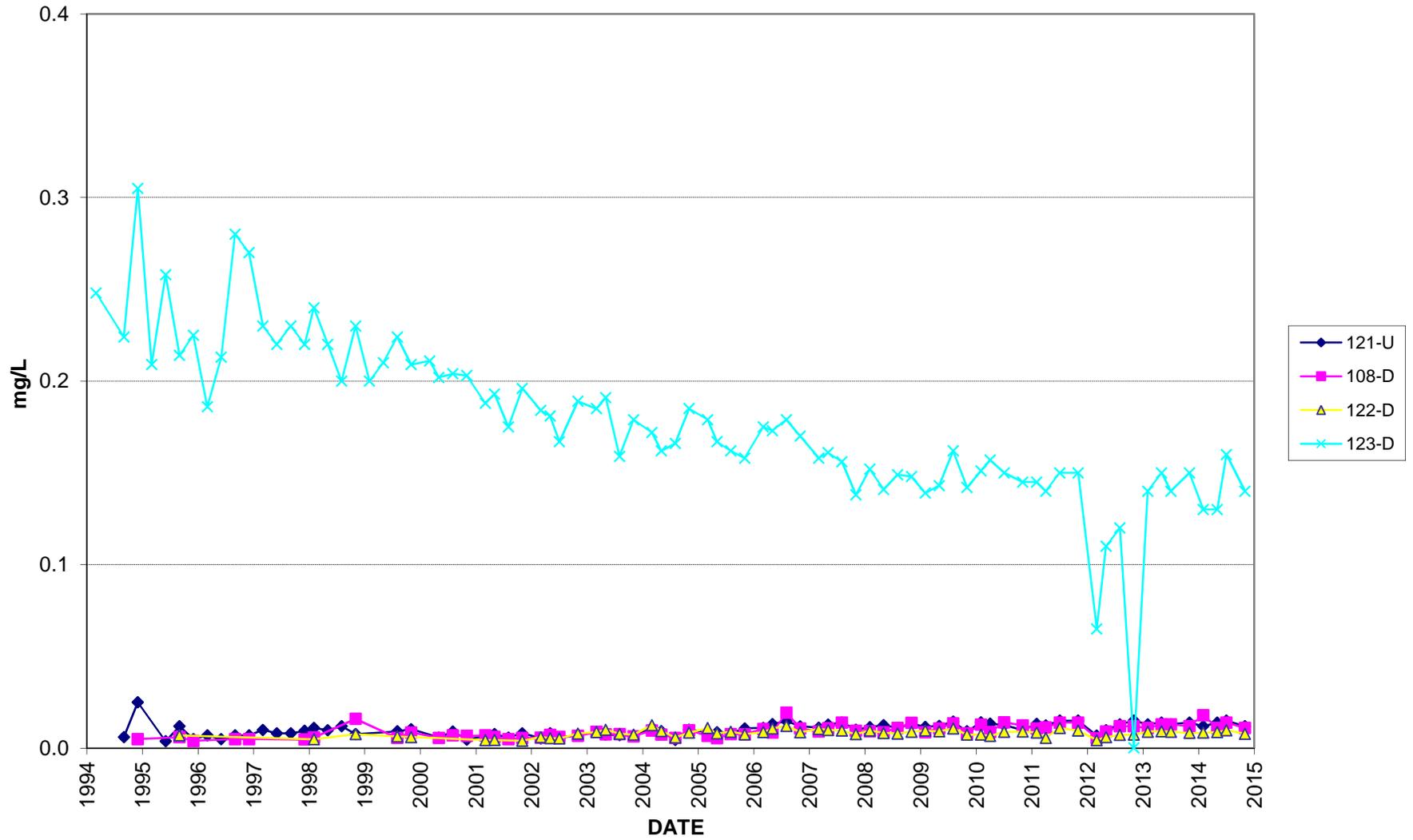
### *Mann-Whitney U Test Results*

Sample Date	N	Median	Rank Sum	U	Z	p
Pre-2014	224	0.011	26474.0	1274.0	-0.30	0.76
Year 2014	12	0.013	1492.0			

**Summary:** For downgradient wells, the median of pre-2014 selenium concentrations is not significantly different from the median of Year 2014 selenium concentrations.



### Selenium in Groundwater (WMU 5)



# **POND 8S**

## **Waste Management Unit 7**

**Note:**

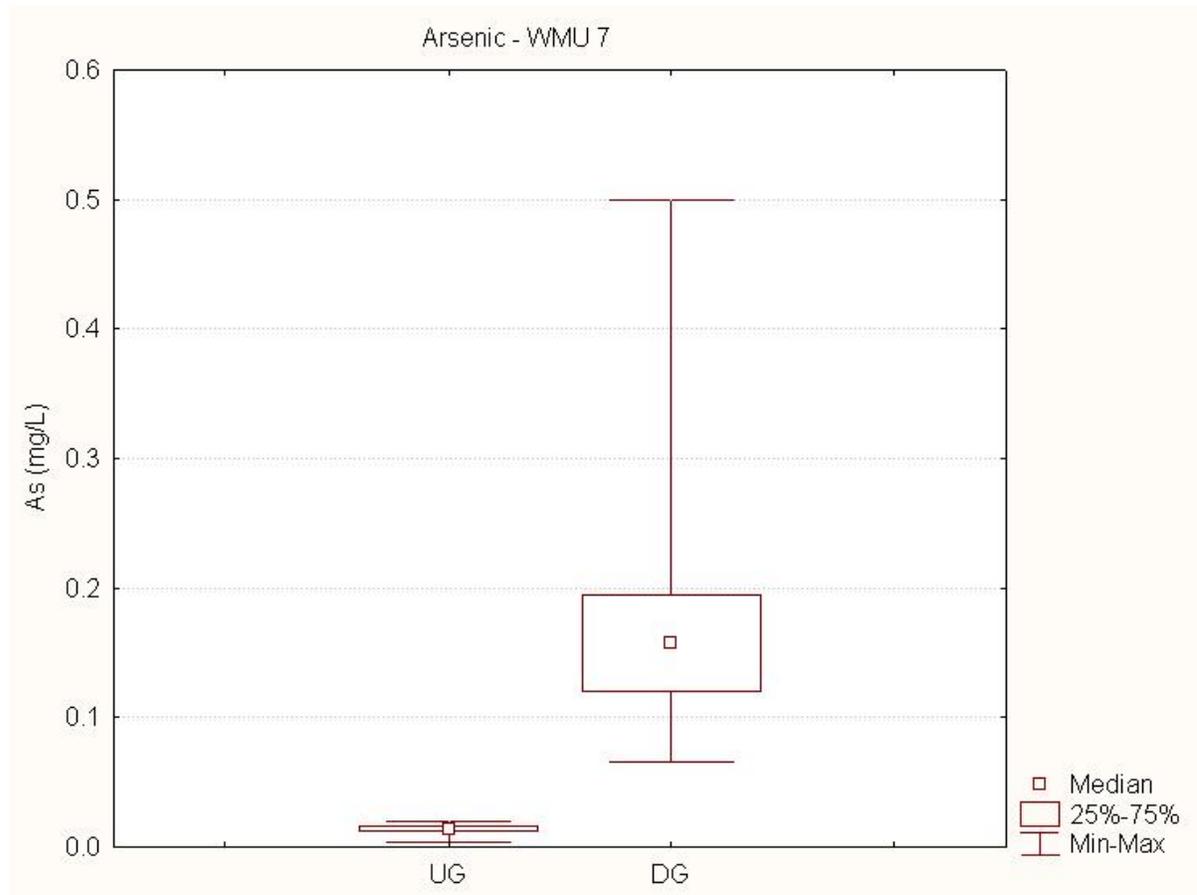
- 1. Time series plot scales are variable depending on the concentrations.**
- 2. Undetected values are not plotted on time series plots**

# WMU 7 TEST 1 ARSENIC

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	147	0.014	10878.0	0.00	-16.44	<0.0001
Downgradient	234	0.157	61893.0			

**Summary:** The median arsenic concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR POND 8S (WMU 7)

Date	Arsenic		Downgradient Wells		
	Upgradient Wells		Well 155	Well 156	Well 157
	Well 158	Well 183			
Sep-91	N.S.	N.S.	N.S.	N.S.	N.S.
Dec-91	N.S.	N.S.	N.S.	N.S.	N.S.
Mar-92	N.S.	N.S.	N.S.	N.S.	N.S.
Jun-92	N.S.	N.S.	N.S.	N.S.	N.S.
Sep-92	N.S.	N.S.	N.S.	N.S.	N.S.
Dec-92	N.S.	N.S.	N.S.	N.S.	N.S.
Mar-93	N.S.	N.S.	N.S.	N.S.	N.S.
Jun-93	N.S.	N.S.	N.S.	N.S.	N.S.
Sep-93	0.015	N.S.	N.S.	N.S.	N.S.
Dec-93	0.013	N.S.	N.S.	N.S.	N.S.
Mar-94	0.017	N.S.	N.S.	N.S.	N.S.
Jun-94	0.014	N.S.	N.S.	N.S.	N.S.
Sep-94	U	N.S.	N.S.	N.S.	N.S.
Dec-94	0.009	N.S.	N.S.	N.S.	N.S.
Mar-95	0.012	N.S.	N.S.	N.S.	N.S.
Jun-95	0.010	N.S.	N.S.	N.S.	N.S.
Sep-95	0.014	N.S.	0.284	0.499	0.193
Dec-95	0.019	N.S.	0.271	0.481	0.199
Mar-96	0.009	N.S.	0.266	0.387	0.167
Jun-96	0.011	N.S.	0.218	0.243	0.174
Sep-96	0.016	N.S.	0.410	0.400	0.260
Dec-96	0.016	N.S.	0.420	0.330	0.230
Mar-97	0.014	N.S.	0.390	0.300	0.200
Jun-97	0.013	N.S.	0.390	0.270	0.240
Sep-97	0.013	N.S.	0.320	0.200	0.180
Dec-97	U	N.S.	0.360	0.180	0.190
Feb-98	0.014	N.S.	0.350	0.210	0.180
May-98	U	N.S.	0.380	0.190	0.200
Aug-98	0.016	N.S.	0.390	0.210	0.240
Nov-98	0.012	0.009	0.390	0.190	0.190
Feb-99	0.013	0.011	0.31	0.18	0.17
May-99	0.013	0.016	0.31	0.2	0.18
Aug-99	0.0154	0.0168	0.284	0.196	0.203
Nov-99	0.0161	0.0149	0.327	0.195	0.173
Mar-00	0.0165	0.0204	0.283	0.201	0.165
May-00	0.0157	0.0183	0.25	0.203	0.162
Aug-00	0.013	0.0162	0.196	0.159	0.193
Nov-00	0.0191	0.0178	0.26	0.166	0.179
Mar-01	0.012	0.0143	0.241	0.155	0.163
May-01	0.0121	0.0143	0.213	0.163	0.15
Aug-01	0.0118	0.016	0.191	0.14	0.169
Nov-01	0.015	0.0181	0.186	0.154	0.173
Mar-02	0.014	0.014	0.202	0.149	0.157
May-02	0.013	0.0154	0.204	0.158	0.167
Aug-02	0.013	0.0153	0.206	0.141	0.169
Nov-02	0.0106	0.0157	0.191	0.149	0.139
Mar-03	0.0128	0.0154	0.221	0.155	0.119
May-03	0.0122	0.0169	0.208	0.163	0.122
Aug-03	0.0113	0.0167	0.185	0.163	0.13

TEST 2  
STATISTICS FOR POND 8S (WMU 7)

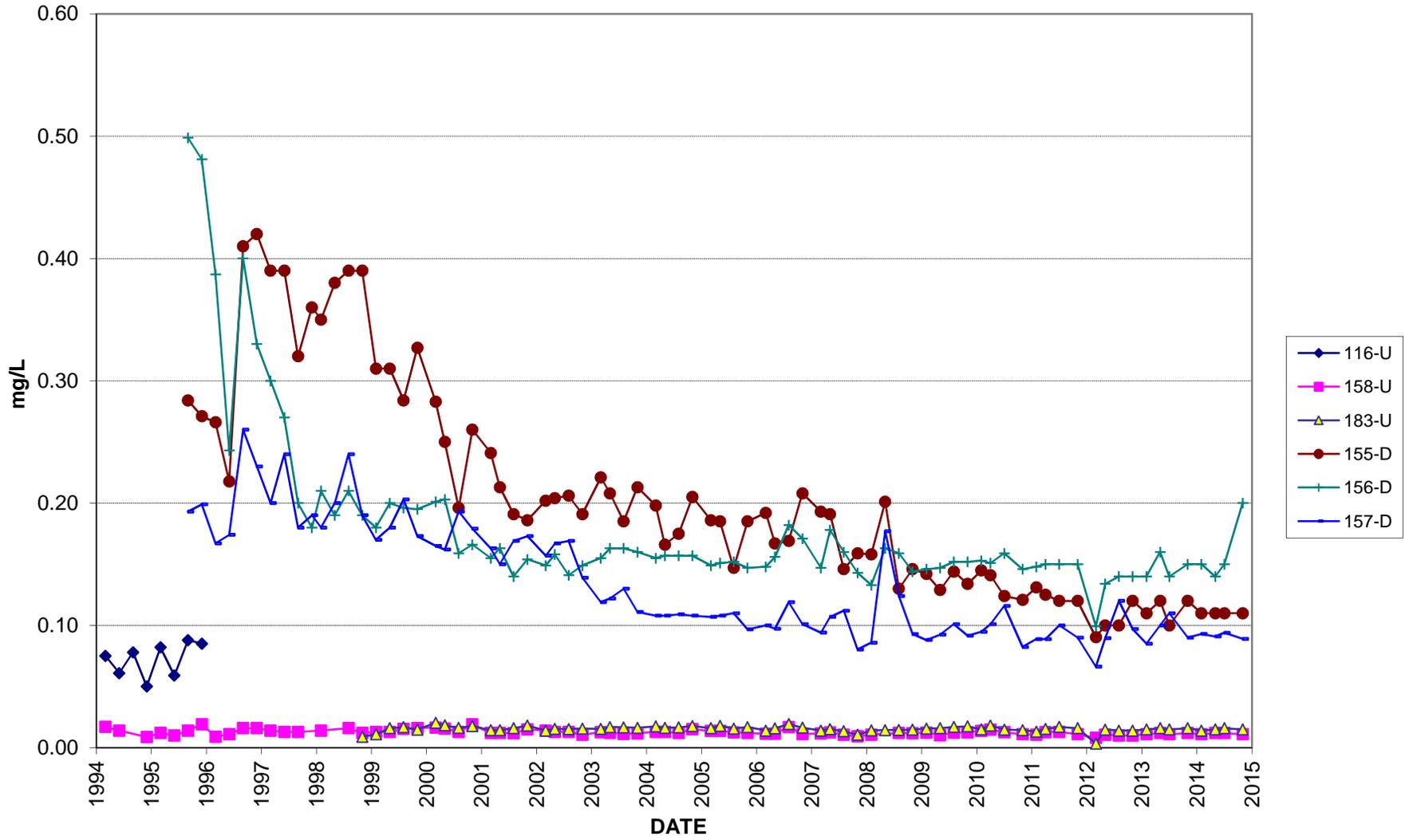
**Arsenic**

Date	Upgradient Wells		Downgradient Wells		
	Well 158	Well 183	Well 155	Well 156	Well 157
Nov-03	<b>0.0117</b>	<b>0.0163</b>	0.213	0.16	0.111
Mar-04	<b>0.013</b>	<b>0.0174</b>	0.198	0.155	0.108
May-04	<b>0.013</b>	<b>0.0163</b>	0.166	0.157	0.108
Aug-04	<b>0.012</b>	<b>0.0166</b>	0.175	0.157	0.109
Nov-04	<b>0.0152</b>	<b>0.0178</b>	0.205	0.157	0.108
Mar-05	<b>0.0137</b>	<b>0.016</b>	0.186	0.149	0.107
May-05	<b>0.0137</b>	<b>0.018</b>	0.185	0.151	0.108
Aug-05	<b>0.0126</b>	<b>0.0157</b>	0.147	0.152	0.11
Nov-05	<b>0.0121</b>	<b>0.0169</b>	0.185	0.147	0.0968
Feb-06	<b>0.0114</b>	<b>0.014</b>	0.192	0.148	0.1
May-06	<b>0.0114</b>	<b>0.0159</b>	0.167	0.156	0.0973
Aug-06	<b>0.0169</b>	<b>0.0193</b>	0.169	0.182	0.119
Nov-06	<b>0.0111</b>	<b>0.0164</b>	0.208	0.171	0.101
Feb-07	<b>0.0117</b>	<b>0.014</b>	0.193	0.147	0.0941
May-07	<b>0.0126</b>	<b>0.0153</b>	0.191	0.178	0.107
Aug-07	<b>0.0106</b>	<b>0.0135</b>	0.146	0.16	0.112
Nov-07	<b>0.0094</b>	<b>0.0106</b>	0.159	0.143	0.0803
Feb-08	<b>0.0107</b>	<b>0.0141</b>	0.158	0.133	0.0859
May-08	U	<b>0.0144</b>	0.201	0.163	0.177
Aug-08	<b>0.012</b>	<b>0.0145</b>	0.13	0.159	0.124
Nov-08	<b>0.0118</b>	<b>0.0148</b>	0.146	0.144	0.0929
Feb-09	<b>0.0124</b>	<b>0.0157</b>	0.142	0.146	0.0881
May-09	<b>0.0103</b>	<b>0.016</b>	0.129	0.147	0.0924
Aug-09	<b>0.0123</b>	<b>0.017</b>	0.144	0.152	0.101
Nov-09	<b>0.0126</b>	<b>0.0174</b>	0.134	0.152	0.0916
Feb-10	<b>0.0138</b>	<b>0.015</b>	0.145	0.153	0.0948
Apr-10	<b>0.0147</b>	<b>0.0182</b>	0.141	0.151	0.101
Jul-10	<b>0.0127</b>	<b>0.0149</b>	0.124	0.159	0.116
Nov-10	<b>0.011</b>	<b>0.0143</b>	0.121	0.146	0.0823
Feb-11	<b>0.0107</b>	<b>0.0132</b>	0.131	0.148	0.0888
Apr-11	<b>0.0128</b>	<b>0.0154</b>	0.125	0.15	0.0888
Jul-11	<b>0.013</b>	<b>0.017</b>	0.12	0.15	0.1
Nov-11	<b>0.011</b>	<b>0.016</b>	0.12	0.15	0.09
Mar-12	<b>0.00815</b>	<b>0.00344</b>	0.0903	0.0993	0.0663
May-12	<b>0.0107</b>	<b>0.0149</b>	0.1	0.134	0.0896
Aug-12	<b>0.01</b>	<b>0.014</b>	0.1	0.14	0.12
Nov-12	<b>0.01</b>	<b>0.014</b>	0.12	0.14	0.097
Feb-13	<b>0.011</b>	<b>0.015</b>	0.11	0.14	0.085
May-13	<b>0.012</b>	<b>0.016</b>	0.12	0.16	0.1
Jul-13	<b>0.011</b>	<b>0.015</b>	0.1	0.14	0.11
Nov-13	<b>0.012</b>	<b>0.016</b>	0.12	0.15	0.09
Feb-14	<i>0.011</i>	<i>0.014</i>	<i>0.11</i>	<i>0.15</i>	<i>0.093</i>
May-14	<i>0.012</i>	<i>0.015</i>	<i>0.11</i>	<i>0.14</i>	<i>0.091</i>
Jul-14	<i>0.012</i>	<i>0.016</i>	<i>0.11</i>	<i>0.15</i>	<i>0.094</i>
Nov-14	<i>0.011</i>	<i>0.015</i>	<i>0.11</i>	<i>0.20</i>	<i>0.089</i>

TEST 2  
STATISTICS FOR POND 8S (WMU 7)

<b>Arsenic</b>					
<u>Date</u>	<b>Upgradient Wells</b>		<b>Downgradient Wells</b>		
	<u>Well 158</u>	<u>Well 183</u>	<u>Well 155</u>	<u>Well 156</u>	<u>Well 157</u>
<b>Test 2 Results</b>					
	<b>Well 158</b>	<b>Well 183</b>	Well 155	Well 156	Well 157
Pre-2014 Mean	<b>0.0128</b>	<b>0.0154</b>	0.2090	0.1818	0.1361
2014 Mean	<b>0.0115</b>	<b>0.0150</b>	0.1100	0.1600	0.0918
<b>1991-2014 Statistical Summary</b>					
Mean	<b>0.0127</b>	<b>0.0154</b>	0.2039	0.1807	0.1339
Median	<b>0.0124</b>	<b>0.0157</b>	0.1885	0.1565	0.1115
Standard Deviation	<b>0.0021</b>	<b>0.0024</b>	0.0877	0.0713	0.0462
Kurtosis	<b>0.8029</b>	<b>9.4198</b>	-0.0023	9.5771	-0.4338
Skewness	<b>0.7490</b>	<b>-2.1545</b>	0.9554	3.0309	0.7621
Minimum	<b>0.0082</b>	<b>0.0034</b>	0.0903	0.0993	0.0663
Maximum	<b>0.0191</b>	<b>0.0204</b>	0.4200	0.4990	0.2600
Count	<b>82</b>	<b>65</b>	78	78	78
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.            N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics.            All concentrations in mg/l.</p>					

### Arsenic in Groundwater (WMU 7)

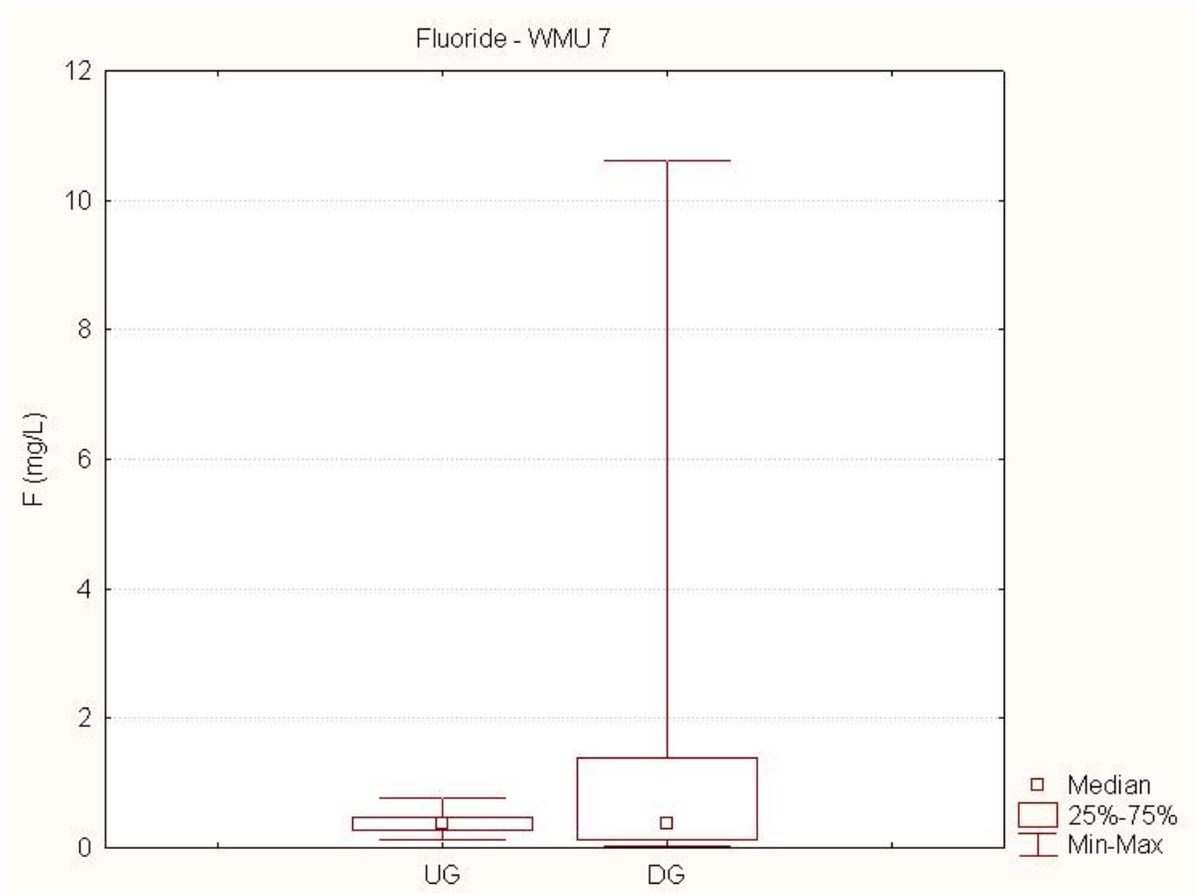


# WMU 7 TEST 1 FLUORIDE

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	142	0.38	17700.0	7547.0	-1.37	0.21
Downgradient	113	0.45	14940.0			

**Summary:** The median fluoride concentration of downgradient (DG) wells is not significantly different than the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR POND 8S (WMU 7)

<b>Fluoride</b>					
<u>Date</u>	<u>Upgradient Wells</u>			<u>Downgradient Wells</u>	
	<u>Well 158</u>	<u>Well 183</u>	<u>Well 155</u>	<u>Well 156</u>	<u>Well 157</u>
Sep-91	N.S.	N.S.	N.S.	N.S.	N.S.
Dec-91	N.S.	N.S.	N.S.	N.S.	N.S.
Mar-92	N.S.	N.S.	N.S.	N.S.	N.S.
Jun-92	N.S.	N.S.	N.S.	N.S.	N.S.
Sep-92	N.S.	N.S.	N.S.	N.S.	N.S.
Dec-92	N.S.	N.S.	N.S.	N.S.	N.S.
Mar-93	N.S.	N.S.	N.S.	N.S.	N.S.
Jun-93	N.S.	N.S.	N.S.	N.S.	N.S.
Sep-93	<b>0.500</b>	N.S.	N.S.	N.S.	N.S.
Dec-93	<b>0.500</b>	N.S.	N.S.	N.S.	N.S.
Mar-94	<b>0.500</b>	N.S.	N.S.	N.S.	N.S.
Jun-94	<b>0.500</b>	N.S.	N.S.	N.S.	N.S.
Sep-94	<b>0.600</b>	N.S.	N.S.	N.S.	N.S.
Dec-94	<b>0.300</b>	N.S.	N.S.	N.S.	N.S.
Mar-95	<b>0.492</b>	N.S.	N.S.	N.S.	N.S.
Jun-95	<b>0.450</b>	N.S.	N.S.	N.S.	N.S.
Sep-95	<b>0.642</b>	N.S.	U	U	8.280
Dec-95	U	N.S.	U	U	7.240
Mar-96	<b>0.518</b>	N.S.	U	U	8.760
Jun-96	<b>0.554</b>	N.S.	0.129	U	9.960
Sep-96	U	N.S.	U	U	6.700
Dec-96	U	N.S.	U	0.160	10.600
Mar-97	<b>0.390</b>	N.S.	U	0.180	9.200
Jun-97	<b>0.380</b>	N.S.	U	0.460	10.100
Sep-97	<b>0.360</b>	N.S.	U	U	8.500
Dec-97	<b>0.340</b>	N.S.	U	0.370	8.150
Feb-98	<b>0.360</b>	N.S.	U	0.120	7.900
May-98	<b>0.360</b>	N.S.	U	0.150	7.900
Aug-98	<b>0.360</b>	N.S.	U	0.140	7.200
Nov-98	<b>0.390</b>	<b>0.50</b>	U	0.130	6.200
Feb-99	<b>0.41</b>	<b>0.57</b>	0.12	0.16	5.07
May-99	<b>0.37</b>	<b>0.77</b>	U	0.16	6.8
Aug-99	<b>0.35</b>	<b>0.78</b>	U	0.1	5.5
Nov-99	U	U	U	U	U
Mar-00	<b>0.34</b>	<b>0.49</b>	U	U	3.52
May-00	<b>0.23</b>	<b>0.53</b>	U	0.17	4.6
Aug-00	<b>0.32</b>	<b>0.47</b>	U	0.11	5.3
Nov-00	<b>0.35</b>	<b>0.48</b>	U	U	4.2
Mar-01	<b>0.22</b>	<b>0.53</b>	U	0.12	4.19
May-01	<b>0.29</b>	<b>0.52</b>	U	0.11	4.8
Aug-01	<b>0.17</b>	<b>0.47</b>	U	U	6.1
Nov-01	<b>0.29</b>	<b>0.48</b>	U	U	4.7
Mar-02	<b>0.31</b>	<b>0.6</b>	U	U	4.2
May-02	N.S.	N.S.	N.S.	N.S.	N.S.
Aug-02	<b>0.3</b>	N.S.	N.S.	N.S.	N.S.
Nov-02	<b>0.25</b>	<b>0.42</b>	U	U	2
Mar-03	<b>0.34</b>	<b>0.45</b>	U	0.12	1.3
May-03	<b>0.27</b>	<b>0.54</b>	U	U	1.2
Aug-03	<b>0.33</b>	<b>0.6</b>	U	U	1.6
Nov-03	<b>0.21</b>	<b>0.52</b>	U	U	1.4

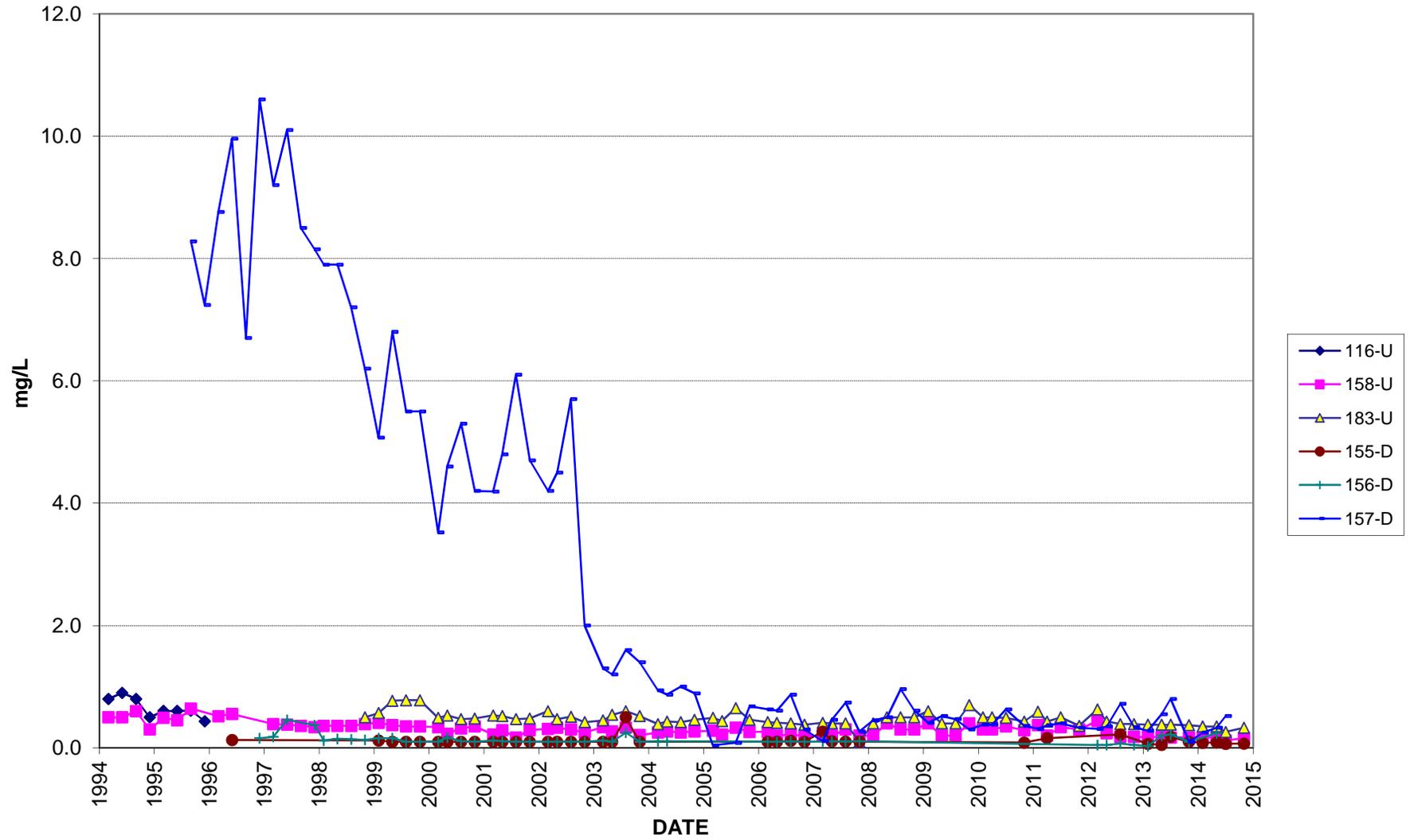
TEST 2  
STATISTICS FOR POND 8S (WMU 7)

<b>Fluoride</b>					
<u>Date</u>	<u>Upgradient Wells</u>			<u>Downgradient Wells</u>	
	<u>Well 158</u>	<u>Well 183</u>	<u>Well 155</u>	<u>Well 156</u>	<u>Well 157</u>
Mar-04	<b>0.25</b>	<b>0.39</b>	U	0.11	0.94
May-04	<b>0.27</b>	<b>0.43</b>	U	0.11	0.87
Aug-04	<b>0.25</b>	<b>0.42</b>	U	U	1
Nov-04	<b>0.27</b>	<b>0.46</b>	U	U	0.89
Mar-05	<b>0.28</b>	<b>0.49</b>	0.1	U	0.041
May-05	<b>0.22</b>	<b>0.44</b>	N.S.	N.S.	N.S.
Aug-05	<b>0.33</b>	<b>0.65</b>	0.1	U	0.083
Nov-05	<b>0.26</b>	<b>0.46</b>	0.1	U	0.68
Feb-06	<b>0.26</b>	<b>0.42</b>	U	U	0.63
May-06	<b>0.2</b>	<b>0.41</b>	U	U	0.61
Aug-06	<b>0.22</b>	<b>0.4</b>	U	U	0.869
Nov-06	<b>0.19</b>	<b>0.38</b>	0.104	U	0.3
Feb-07	<b>0.2</b>	<b>0.41</b>	U	U	U
May-07	<b>0.2</b>	<b>0.4</b>	U	U	0.46
Aug-07	<b>0.3</b>	<b>0.4</b>	U	U	0.739
Nov-07	<b>0.2</b>	U	0.1	0.1	0.601
Feb-08	<b>0.2</b>	<b>0.4</b>	U	U	0.45
May-08	<b>0.4</b>	<b>0.5</b>	U	U	0.5
Aug-08	<b>0.3</b>	<b>0.5</b>	U	U	0.96
Nov-08	<b>0.3</b>	<b>0.5</b>	U	U	0.61
Feb-09	<b>0.4</b>	<b>0.6</b>	U	U	0.41
May-09	<b>0.2</b>	<b>0.4</b>	U	U	0.52
Aug-09	<b>0.2</b>	<b>0.4</b>	U	U	0.47
Nov-09	<b>0.4</b>	<b>0.7</b>	U	U	0.3
Feb-10	<b>0.3</b>	<b>0.5</b>	U	U	0.38
Apr-10	<b>0.3</b>	<b>0.5</b>	U	U	0.38
Jul-10	<b>0.35</b>	<b>0.49</b>	U	U	0.63
Nov-10	<b>0.29</b>	<b>0.43</b>	0.086	U	0.36
Feb-11	<b>0.37</b>	<b>0.59</b>	U	U	0.31
Apr-11	<b>0.2</b>	<b>0.43</b>	0.16	U	0.37
Jul-11	<b>0.34</b>	<b>0.5</b>	U	U	0.4
Nov-11	<b>0.3</b>	<b>0.36</b>	U	U	0.33
Mar-12	<b>0.44</b>	<b>0.63</b>	U	0.047	0.31
May-12	<b>0.24</b>	<b>0.43</b>	U	0.047	0.35
Aug-12	<b>0.18</b>	<b>0.39</b>	0.22	0.073	0.72
Nov-12	<b>0.18</b>	<b>0.39</b>	U	0.047	0.34
Feb-13	<b>0.18</b>	<b>0.38</b>	0.066	0.028	0.28
May-13	<b>0.18</b>	<b>0.38</b>	U	U	0.55
Jul-13	<b>0.17</b>	<b>0.38</b>	0.18	U	0.8
Nov-13	<b>0.17</b>	<b>0.37</b>	U	U	0.3
Feb-14	<b>0.17</b>	<b>0.35</b>	0.082	U	0.25
May-14	<b>0.17</b>	<b>0.35</b>	0.089	0.24	0.33
Jul-14	<b>0.12</b>	<b>0.26</b>	0.067	U	0.52
Nov-14	<b>0.16</b>	<b>0.33</b>	0.071	U	U

TEST 2  
STATISTICS FOR POND 8S (WMU 7)

<b>Fluoride</b>					
<u>Date</u>	<b>Upgradient Wells</b>		Downgradient Wells		
	<b><u>Well 158</u></b>	<b><u>Well 183</u></b>	<u>Well 155</u>	<u>Well 156</u>	<u>Well 157</u>
<b>Test 2 Results</b>					
	<b>Well 158</b>	<b>Well 183</b>	Well 155	Well 156	Well 157
Pre-2014 Mean	<b>0.3161</b>	<b>0.4812</b>	0.1221	0.1384	2.9408
2014 Mean	<b>0.1550</b>	<b>0.3225</b>	0.0773	0.2400	0.3667
<b>1991-2014 Statistical Summary</b>					
Mean	<b>0.3081</b>	<b>0.4708</b>	0.1109	0.1425	2.8335
Median	<b>0.3000</b>	<b>0.4600</b>	0.1000	0.1200	0.8695
Standard Deviation	<b>0.1115</b>	<b>0.1012</b>	0.0428	0.0957	3.2285
Kurtosis	<b>0.3216</b>	<b>1.4785</b>	1.6964	5.1144	-0.4769
Skewness	<b>0.7782</b>	<b>1.0382</b>	1.4191	2.0655	1.0008
Minimum	<b>0.1200</b>	<b>0.2600</b>	0.0660	0.0280	0.0410
Maximum	<b>0.6420</b>	<b>0.7800</b>	0.2200	0.4600	10.6000
Count	<b>81</b>	<b>61</b>	16	25	72
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.  N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics.  All concentrations in mg/l.</p>					

### Fluoride in Groundwater (WMU 7)

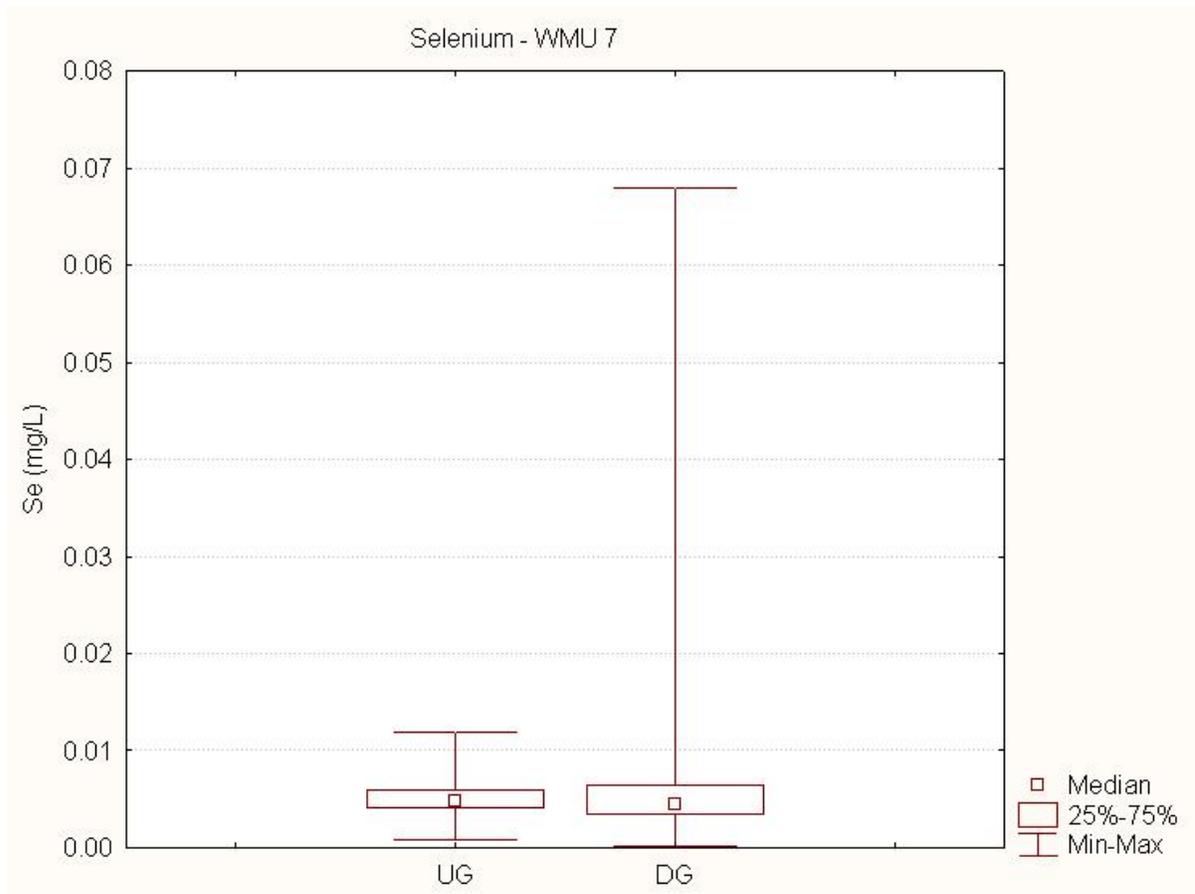


## WMU 7 TEST 1 SELENIUM

### *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	86	0.0048	8051.0	3258.0	1.58	0.11
Downgradient	88	0.0045	7174.0			

**Summary:** The median selenium concentration of upgradient (UG) wells is not significantly different from the median concentration of downgradient (DG) wells.



TEST 2  
STATISTICS FOR POND 8S (WMU 7)

**Selenium**

Date	Upgradient Wells		Downgradient Wells		
	Well 158	Well 183	Well 155	Well 156	Well 157
Sep-91	N.S.	N.S.	N.S.	N.S.	N.S.
Dec-91	N.S.	N.S.	N.S.	N.S.	N.S.
Mar-92	N.S.	N.S.	N.S.	N.S.	N.S.
Jun-92	N.S.	N.S.	N.S.	N.S.	N.S.
Sep-92	N.S.	N.S.	N.S.	N.S.	N.S.
Dec-92	N.S.	N.S.	N.S.	N.S.	N.S.
Mar-93	N.S.	N.S.	N.S.	N.S.	N.S.
Jun-93	N.S.	N.S.	N.S.	N.S.	N.S.
Sep-93	U	N.S.	N.S.	N.S.	N.S.
Dec-93	<b>0.002</b>	N.S.	N.S.	N.S.	N.S.
Mar-94	U	N.S.	N.S.	N.S.	N.S.
Jun-94	U	N.S.	N.S.	N.S.	N.S.
Sep-94	U	N.S.	N.S.	N.S.	N.S.
Dec-94	U	N.S.	N.S.	N.S.	N.S.
Mar-95	U	N.S.	N.S.	N.S.	N.S.
Jun-95	U	N.S.	N.S.	N.S.	N.S.
Sep-95	<b>0.002</b>	N.S.	0.068	0.028	0.005
Dec-95	U	N.S.	U	0.002	U
Mar-96	U	N.S.	U	U	U
Jun-96	U	N.S.	U	U	U
Sep-96	U	N.S.	0.003	0.003	0.004
Dec-96	U	N.S.	U	U	U
Mar-97	U	N.S.	0.006	0.0045	U
Jun-97	U	N.S.	U	U	0.0046
Sep-97	U	N.S.	U	U	U
Dec-97	U	N.S.	U	0.0043	U
Feb-98	<b>0.005</b>	N.S.	0.0039	0.0065	0.0038
May-98	U	N.S.	U	U	U
Aug-98	U	N.S.	U	0.0079	U
Nov-98	U	<b>0.004</b>	U	0.0041	0.0045
Feb-99	U	U	U	U	U
May-99	U	U	U	U	U
Aug-99	U	<b>0.0048</b>	U	0.0027	U
Nov-99	U	<b>0.0065</b>	U	0.0051	U
Mar-00	U	U	U	U	U
May-00	U	U	U	U	U
Aug-00	U	U	0.0047	U	U
Nov-00	U	U	U	U	0.0052
Mar-01	U	U	0.003	U	U
May-01	U	<b>0.0081</b>	U	0.0046	U
Aug-01	U	U	U	0.0038	U
Nov-01	U	<b>0.0042</b>	U	0.0041	U
Mar-02	U	U	U	0.0042	U
May-02	<b>0.0043</b>	<b>0.0045</b>	U	U	0.0037
Aug-02	U	<b>0.0056</b>	U	0.0055	U
Nov-02	<b>0.0041</b>	<b>0.0038</b>	0.0034	U	U
Mar-03	<b>0.0042</b>	U	0.0035	0.0034	U
May-03	U	<b>0.0063</b>	U	0.0036	U
Aug-03	U	<b>0.0059</b>	U	0.0037	0.0045

TEST 2  
STATISTICS FOR POND 8S (WMU 7)

**Selenium**

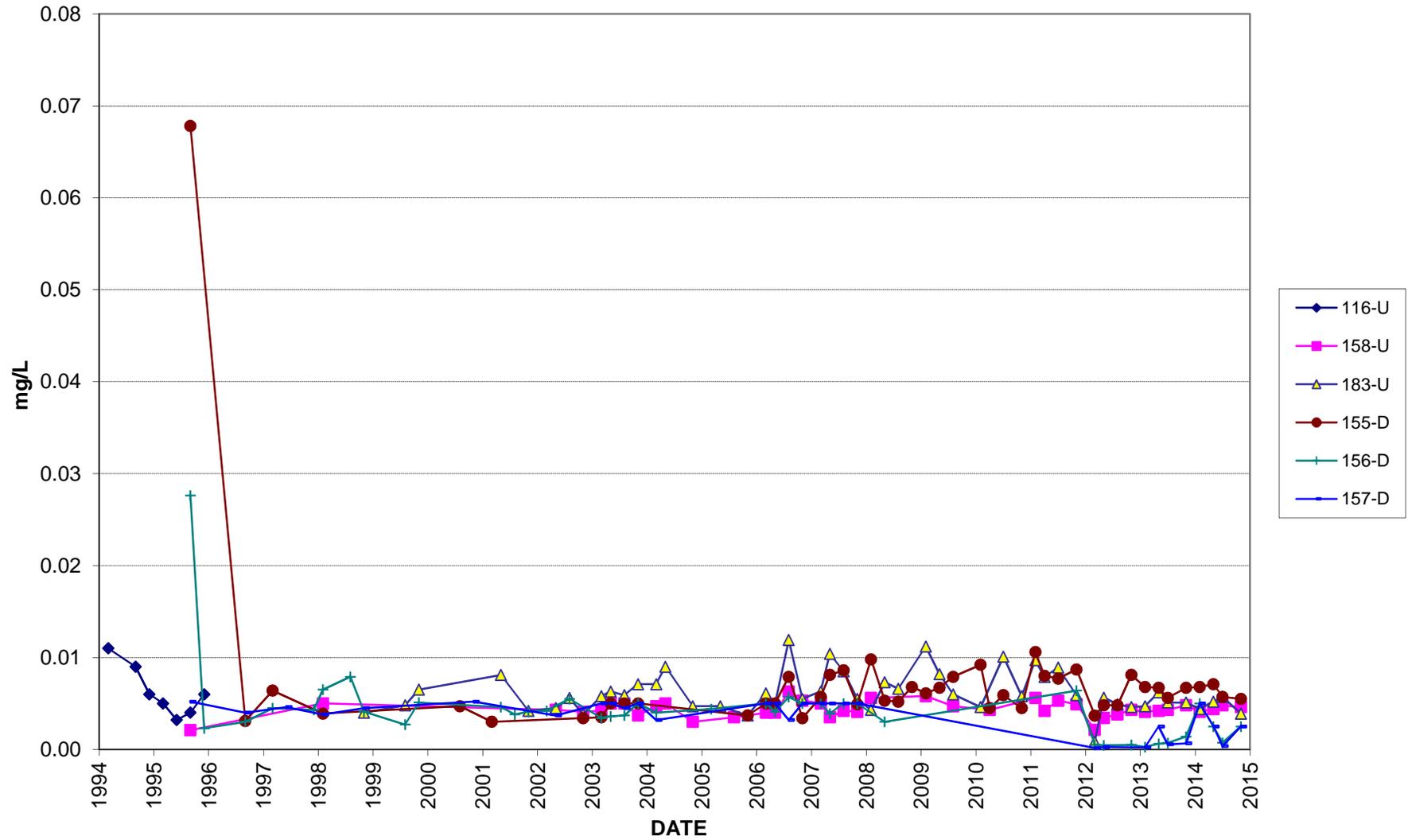
Date	Upgradient Wells		Downgradient Wells		
	Well 158	Well 183	Well 155	Well 156	Well 157
Nov-03	0.0037	0.0071	U	U	U
Mar-04	0.0047	0.0071	U	0.004	0.0032
May-04	0.005	0.009	U	U	U
Aug-04	U	U	U	U	U
Nov-04	0.003	0.0047	U	U	U
Mar-05	U	U	U	0.0044	U
May-05	U	0.0047	U	U	U
Aug-05	0.0035	U	U	U	U
Nov-05	U	0.0037	0.0037	U	U
Feb-06	0.004	0.0061	U	U	U
May-06	0.004	0.005	U	0.0041	U
Aug-06	0.0063	0.0119	0.0079	0.0057	0.0032
Nov-06	0.0053	0.0055	0.0034	U	U
Feb-07	U	0.0063	0.0057	U	U
May-07	0.0035	0.0104	0.0081	0.0039	U
Aug-07	0.0042	0.0085	0.0086	U	U
Nov-07	0.0041	0.0055	0.0049	U	U
Feb-08	U	0.0043	0.0098	U	U
May-08	U	0.0073	0.0053	0.003	U
Aug-08	U	0.0066	0.0052	U	U
Nov-08	U	U	0.0068	U	U
Feb-09	0.0058	0.0112	0.0061	U	U
May-09	U	0.0082	0.0067	U	U
Aug-09	0.0047	0.006	0.0079	U	U
Nov-09	U	U	U	U	U
Feb-10	U	0.0046	0.0092	U	U
Apr-10	0.0043	U	0.0045	U	U
Jul-10	U	0.0101	0.0059	U	U
Nov-10	U	0.0058	0.0045	U	U
Feb-11	0.0056	0.0097	0.0106	U	U
Apr-11	0.0042	0.0079	0.008	U	U
Jul-11	0.0053	0.0089	0.0077	U	U
Nov-11	0.0049	0.0059	0.0087	0.0064	U
Mar-12	0.00214	0.00084	0.00368	0.00052	0.00015
May-12	0.00342	0.00563	0.00481	0.00046	0.00027
Aug-12	0.0038	0.0049	0.0048	U	U
Nov-12	0.0043	0.0046	0.0081	U	U
Feb-13	0.0041	0.0047	0.0068	U	U
May-13	0.0042	0.0062	0.0067	0.00062	U
Jul-13	0.0043	0.0051	0.0056	0.0007	0.00055
Nov-13	0.0048	0.0051	0.0067	0.0014	0.00067
Feb-14	0.0041	0.0044	0.0068	U	U
May-14	0.0044	0.0052	0.0071	U	U
Jul-14	0.0048	0.0057	0.0057	0.00073	0.00036
Nov-14	0.0046	0.0039	0.0055	U	U

TEST 2  
STATISTICS FOR POND 8S (WMU 7)

<b>Selenium</b>					
<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	<u>Well 158</u>	<u>Well 183</u>	<u>Well 155</u>	<u>Well 156</u>	<u>Well 157</u>
<b>Test 2 Results</b>					
	<b>Well 158</b>	<b>Well 183</b>	Well 155	Well 156	Well 157
Pre-2014 Mean	<b>0.0042</b>	<b>0.0063</b>	0.0077	0.0045	0.0031
2014 Mean	<b>0.0045</b>	<b>0.0048</b>	0.0063	0.0007	0.0004
<b>1991-2014 Statistical Summary</b>					
Mean	<b>0.0042</b>	<b>0.0062</b>	0.0076	0.0044	0.0029
Median	<b>0.0042</b>	<b>0.0057</b>	0.0060	0.0040	0.0037
Standard Deviation	<b>0.0009</b>	<b>0.0022</b>	0.0097	0.0048	0.0019
Kurtosis	<b>1.0479</b>	<b>0.7564</b>	38.5437	21.4555	-1.5715
Skewness	<b>-0.5433</b>	<b>0.7035</b>	6.0883	4.2617	-0.5112
Minimum	<b>0.0020</b>	<b>0.0008</b>	0.0030	0.0005	0.0002
Maximum	<b>0.0063</b>	<b>0.0119</b>	0.0680	0.0280	0.0052
Count	<b>37</b>	<b>49</b>	42	31	15

U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.  
N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics.  
All concentrations in mg/l.

### Selenium in Groundwater (WMU 7)



# **PHASE IV PONDS AND POND 8E**

## **Waste Management Units 8 and 11**

**Note:**

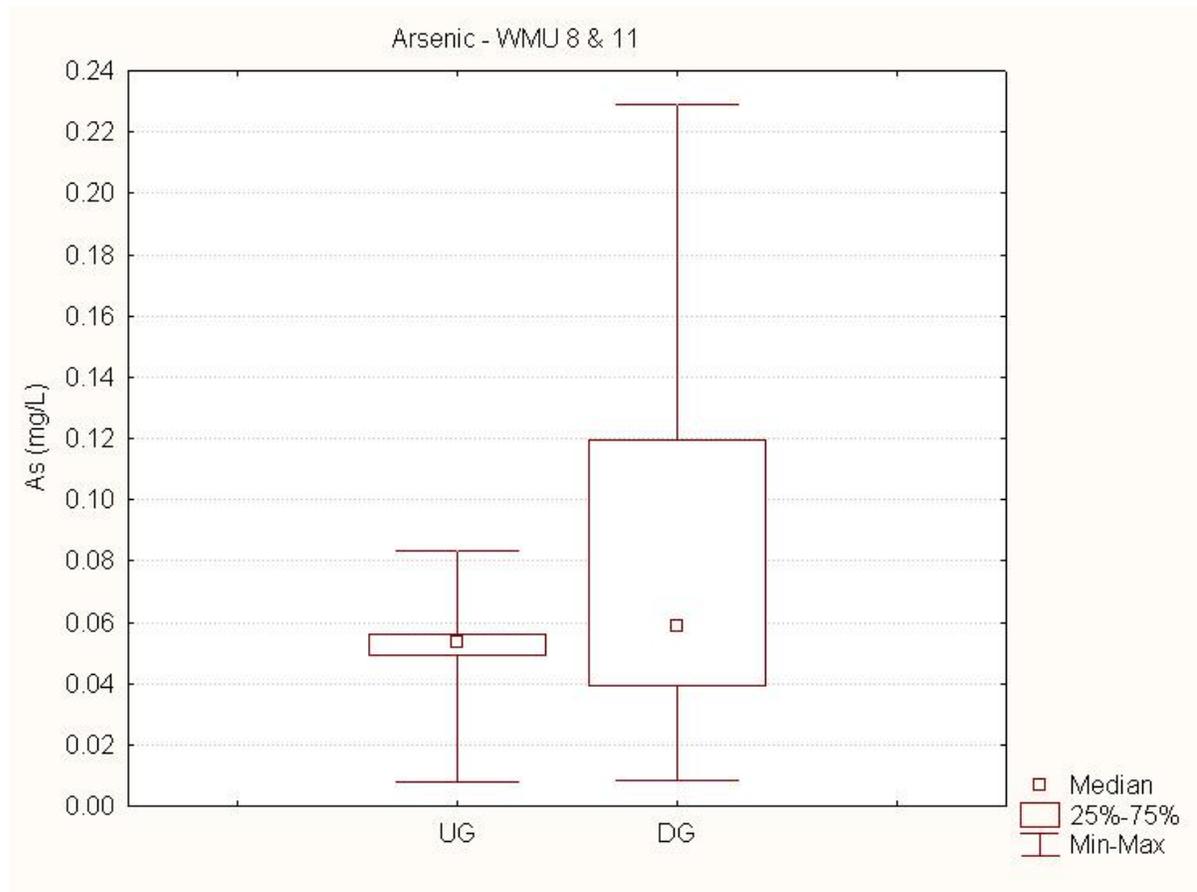
- 1. Time series plot scales are variable depending on the concentrations.**
- 2. Undetected values are not plotted on time series plots**

# WMU 8 & 11 TEST 1 ARSENIC

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	78	0.054	14490.5	11409.5	-2.60	0.0095
Downgradient	360	0.059	81650.5			

**Summary:** The median arsenic concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR PHASE IV PONDS & POND 8E (WMU 8 AND 11)

**Arsenic**

<u>Date</u>	<u>Upgradient Well</u>	<u>Downgradient Wells</u>			
	<u>Well 167</u>	<u>Well 104</u>	<u>Well 114</u>	<u>Well 131</u>	<u>Well 168</u>
Sep-91	N.S.	0.0920	0.1750	0.0430	N.S.
Dec-91	N.S.	0.0980	0.1780	0.0450	N.S.
Mar-92	N.S.	0.0810	0.1840	0.0590	N.S.
Jun-92	N.S.	0.2120	0.1950	0.0480	N.S.
Sep-92	N.S.	0.2290	0.1537	0.0520	N.S.
Dec-92	N.S.	0.1800	0.1790	0.0470	N.S.
Mar-93	N.S.	0.1640	0.1200	0.0580	N.S.
Jun-93	N.S.	0.1640	0.1818	0.0470	N.S.
Sep-93	N.S.	0.1270	0.2018	0.0550	N.S.
Dec-93	N.S.	0.1220	0.1722	0.0540	N.S.
Mar-94	N.S.	0.1280	0.1919	0.0550	N.S.
Jun-94	N.S.	0.1720	0.1284	0.0460	N.S.
Sep-94	N.S.	0.0580	0.1079	0.0540	N.S.
Dec-94	N.S.	0.1260	0.1758	0.0560	N.S.
Mar-95	N.S.	0.1050	0.1380	0.0430	N.S.
Jun-95	N.S.	0.0970	0.1558	0.0760	N.S.
Sep-95	<b>0.0190</b>	0.0960	0.1546	0.0690	0.0350
Dec-95	<b>0.0080</b>	0.1040	0.1532	0.0520	0.0480
Mar-96	<b>0.0310</b>	0.0770	0.1212	0.0460	0.0130
Jun-96	<b>0.0430</b>	0.0840	0.1219	0.0540	0.0240
Sep-96	<b>0.0550</b>	0.0980	0.1400	0.0630	0.0320
Dec-96	<b>0.0590</b>	0.1100	0.1600	0.0600	0.0300
Mar-97	<b>0.0600</b>	0.0950	0.1500	0.0590	0.0220
Jun-97	<b>0.0610</b>	0.0920	0.1400	0.0560	0.0240
Sep-97	<b>0.0670</b>	0.0980	0.1500	0.0700	0.0370
Dec-97	<b>0.0620</b>	0.0890	0.1400	0.0580	0.0260
Feb-98	<b>0.0520</b>	0.0820	0.1300	0.0540	0.0240
May-98	<b>0.0580</b>	0.0850	0.1400	0.0650	0.0290
Aug-98	<b>0.0560</b>	0.0790	0.1300	0.0680	0.0240
Nov-98	<b>0.0540</b>	0.0680	0.1100	0.0510	0.0210
Feb-99	<b>0.0620</b>	0.0860	0.1500	0.0650	0.0280
May-99	<b>0.0550</b>	0.0760	0.1500	0.0660	0.0270
Aug-99	<b>0.0525</b>	0.0828	0.1520	0.0817	0.0300
Nov-99	<b>0.0834</b>	0.0772	0.1520	0.0726	0.0309
Mar-00	<b>0.0609</b>	0.0747	0.1400	0.0712	0.0317
May-00	<b>0.0523</b>	0.0722	0.1440	0.0669	0.0272
Aug-00	<b>0.0557</b>	0.0716	0.1450	0.0731	0.0304
Nov-00	<b>0.0575</b>	0.0672	0.1430	0.0749	0.0310
Feb-01	<b>0.0536</b>	0.0663	0.1390	0.0612	0.0273
May-01	<b>0.0530</b>	0.0632	0.1400	0.0667	0.0257
Aug-01	<b>0.0541</b>	0.0568	0.1310	0.0552	0.0248
Nov-01	<b>0.0537</b>	0.0663	0.1350	0.0673	0.0262
Mar-02	<b>0.0539</b>	0.0622	0.1400	0.0611	0.0273
May-02	<b>0.0567</b>	0.0589	0.1350	0.0628	0.0296
Jul-02	<b>0.0478</b>	0.0572	0.1290	0.0659	0.0273
Nov-02	<b>0.0552</b>	0.0596	0.1380	0.0662	0.0268
Mar-03	<b>0.0597</b>	0.0596	0.1390	0.0596	0.0278
May-03	<b>0.0562</b>	0.0597	0.1400	0.0680	0.0263

TEST 2  
STATISTICS FOR PHASE IV PONDS & POND 8E (WMU 8 AND 11)

**Arsenic**

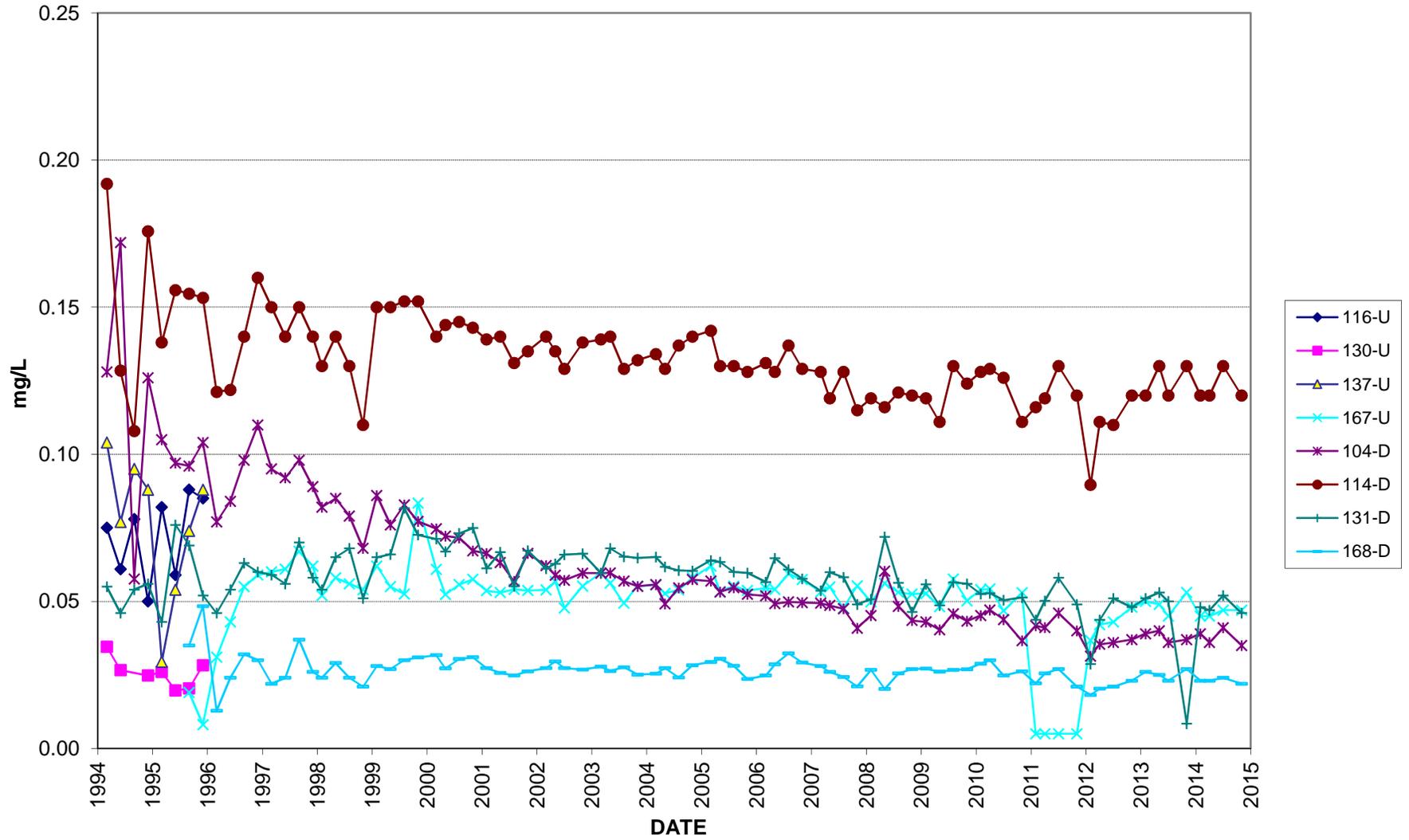
<u>Date</u>	<u>Upgradient Well</u>	<u>Downgradient Wells</u>			
	<u>Well 167</u>	<u>Well 104</u>	<u>Well 114</u>	<u>Well 131</u>	<u>Well 168</u>
Aug-03	<b>0.0494</b>	0.0569	0.1290	0.0652	0.0276
Nov-03	<b>0.0552</b>	0.0551	0.1320	0.0648	0.0251
Mar-04	<b>0.0556</b>	0.0557	0.1340	0.0651	0.0254
May-04	<b>0.0527</b>	0.0491	0.1290	0.0617	0.0273
Aug-04	<b>0.0539</b>	0.0546	0.1370	0.0605	0.0241
Nov-04	<b>0.0580</b>	0.0574	0.1400	0.0604	0.0283
Mar-05	<b>0.0620</b>	0.0569	0.1420	0.0639	0.0294
May-05	<b>0.0532</b>	0.0532	0.1300	0.0634	0.0305
Aug-05	<b>0.0552</b>	0.0547	0.1300	0.0600	0.0281
Nov-05	<b>0.0537</b>	0.0524	0.1280	0.0597	0.0236
Feb-06	<b>0.0545</b>	0.0519	0.1310	0.0566	0.0248
May-06	<b>0.0541</b>	0.0492	0.1280	0.0647	0.0286
Aug-06	<b>0.0594</b>	0.0498	0.1370	0.0608	0.0323
Nov-06	<b>0.0574</b>	0.0496	0.1290	0.0577	0.0292
Feb-07	<b>0.0532</b>	0.0494	0.1280	0.0536	0.0280
May-07	<b>0.0549</b>	0.0486	0.1190	0.0599	0.0260
Aug-07	<b>0.0477</b>	0.0475	0.1280	0.0582	0.0243
Nov-07	<b>0.0553</b>	0.0409	0.1150	0.0490	0.0211
Feb-08	<b>0.0498</b>	0.0452	0.1190	0.0507	0.0267
May-08	<b>0.0561</b>	0.0603	0.1160	0.0719	0.0202
Aug-08	<b>0.0531</b>	0.0483	0.1210	0.0563	0.0255
Nov-08	<b>0.0525</b>	0.0435	0.1200	0.0464	0.0270
Feb-09	<b>0.0527</b>	0.0430	0.1190	0.0558	0.0271
May-09	<b>0.0482</b>	0.0403	0.1110	0.0486	0.0261
Aug-09	<b>0.0576</b>	0.0458	0.1300	0.0565	0.0267
Nov-09	<b>0.0502</b>	0.0433	0.1240	0.0560	0.0269
Feb-10	<b>0.0540</b>	0.0452	0.1280	0.0525	0.0288
Apr-10	<b>0.0542</b>	0.0471	0.1290	0.0528	0.0300
Jul-10	<b>0.0468</b>	0.0438	0.1260	0.0504	0.0248
Nov-10	<b>0.0529</b>	0.0366	0.1110	0.0513	0.0262
Feb-11	<b>0.0441</b>	0.0417	0.1160	0.0437	0.0221
Apr-11	<b>0.0494</b>	0.0411	0.1190	0.0502	0.0255
Aug-11	<b>0.0560</b>	0.0460	0.1300	0.0580	0.0270
Nov-11	<b>0.0510</b>	0.0400	0.1200	0.0490	0.0210
Feb-12	<b>0.0367</b>	0.0314	0.0896	0.0287	0.0182
May-12	<b>0.0421</b>	0.0354	0.1110	0.0437	0.0203
Aug-12	<b>0.0430</b>	0.0360	0.1100	0.0510	0.0210
Oct-12	<b>0.0480</b>	0.0370	0.1200	0.0480	0.0230
Feb-13	<b>0.0500</b>	0.0390	0.1200	0.0510	0.0260
May-13	<b>0.0490</b>	0.0400	0.1300	0.0530	0.0250
Jul-13	<b>0.0450</b>	0.0360	0.1200	0.0500	0.0230
Nov-13	<b>0.0530</b>	0.0370	0.1300	0.0084	0.0270
Feb-14	<i>0.0450</i>	<i>0.0390</i>	<i>0.1200</i>	<i>0.0480</i>	<i>0.0230</i>
Apr-14	<i>0.0450</i>	<i>0.0360</i>	<i>0.1200</i>	<i>0.0470</i>	<i>0.0230</i>
Jul-14	<i>0.0470</i>	<i>0.0410</i>	<i>0.1300</i>	<i>0.0520</i>	<i>0.0240</i>
Nov-14	<i>0.0470</i>	<i>0.0350</i>	<i>0.1200</i>	<i>0.0460</i>	<i>0.0220</i>

TEST 2  
STATISTICS FOR PHASE IV PONDS & POND 8E (WMU 8 AND 11)

<b>Arsenic</b>					
<u>Date</u>	<b>Upgradient Well</b>	<b>Downgradient Wells</b>			
	<b><u>Well 167</u></b>	<u>Well 104</u>	<u>Well 114</u>	<u>Well 131</u>	<u>Well 168</u>
<b>Test 2 Results</b>					
	<b>Well 167</b>	Well 104	Well 114	Well 131	Well 168
Pre-2014 Mean	<b>0.0526</b>	0.0729	0.1371	0.0571	0.0267
2014 Mean	<b>0.0460</b>	0.0378	0.1225	0.0483	0.0230
<b>1991-2014 Statistical Summary</b>					
Mean	<b>0.052</b>	0.071	0.136	0.057	0.026
Median	<b>0.054</b>	0.058	0.130	0.056	0.027
Standard Deviation	<b>0.009</b>	0.039	0.021	0.010	0.004
Kurtosis	<b>8.946</b>	4.299	1.411	4.559	6.977
Skewness	<b>-1.678</b>	1.961	1.114	-0.993	1.223
Minimum	<b>0.008</b>	0.031	0.090	0.008	0.013
Maximum	<b>0.083</b>	0.229	0.202	0.082	0.048
Count	<b>78</b>	94	94	94	78

U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.  
N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics.  
All concentrations in mg/l.

### Arsenic in Groundwater (WMU 8 & 11)

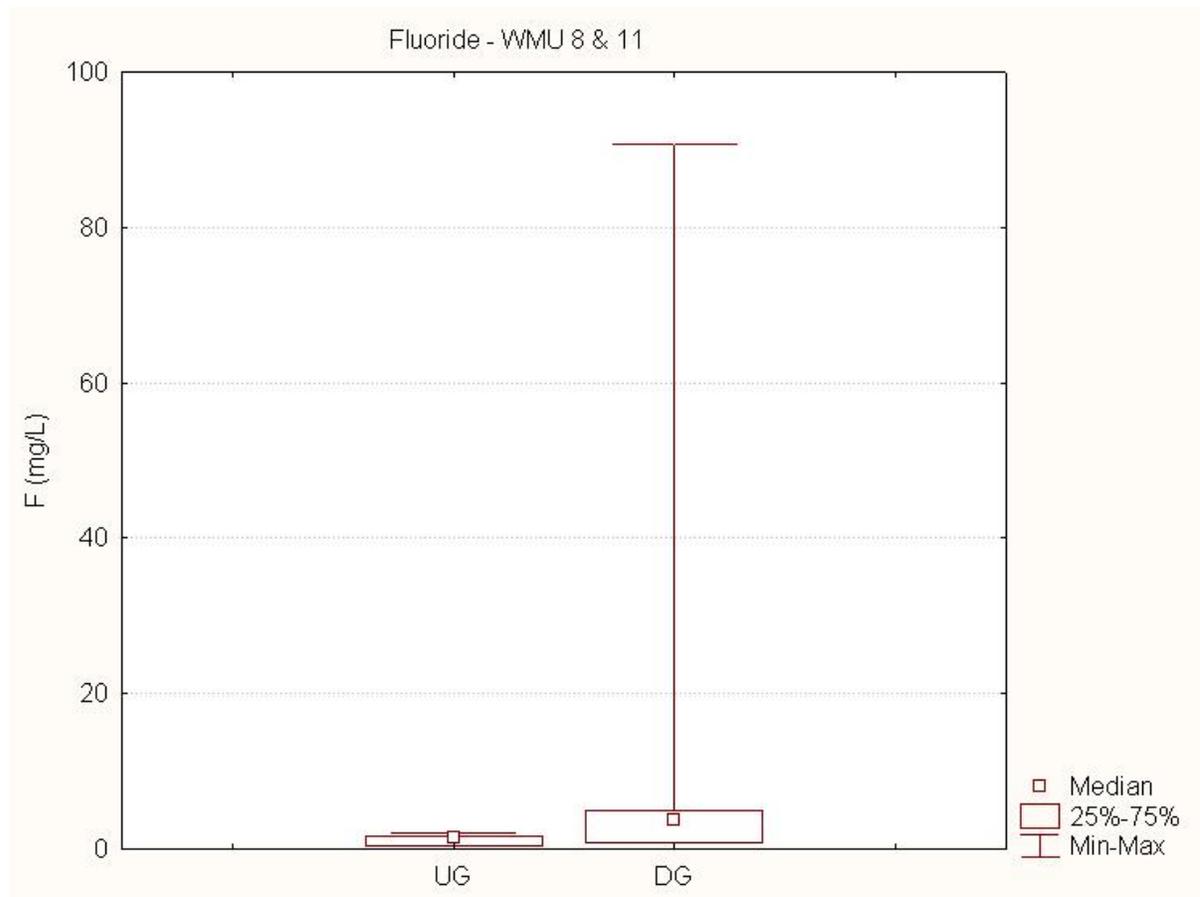


# WMU 8 & 11 TEST 1 FLUORIDE

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	18	1.40	1535.5	1364.5	-3.36	0.0008
Downgradient	287	3.80	45129.5			

**Summary:** The median fluoride concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR PHASE IV PONDS & POND 8E (WMU 8 AND 11)

<b>Fluoride</b>					
<u>Date</u>	<u>Upgradient Well</u>		<u>Downgradient Wells</u>		
	<u>Well 167</u>	<u>Well 104</u>	<u>Well 114</u>	<u>Well 131</u>	<u>Well 168</u>
Sep-91	N.S.	15.000	0.700	0.300	N.S.
Dec-91	N.S.	11.600	0.740	0.230	N.S.
Mar-92	N.S.	19.000	0.848	0.200	N.S.
Jun-92	N.S.	9.170	0.826	0.185	N.S.
Sep-92	N.S.	8.400	0.810	0.200	N.S.
Dec-92	N.S.	8.600	0.700	0.200	N.S.
Mar-93	N.S.	8.200	0.800	0.200	N.S.
Jun-93	N.S.	8.400	0.800	0.300	N.S.
Sep-93	N.S.	7.580	0.600	1.450	N.S.
Dec-93	N.S.	6.500	0.500	U	N.S.
Mar-94	N.S.	8.000	0.600	U	N.S.
Jun-94	N.S.	8.100	0.854	0.800	N.S.
Sep-94	N.S.	6.500	0.700	0.600	N.S.
Dec-94	N.S.	6.700	0.800	0.400	N.S.
Mar-95	N.S.	6.320	0.800	0.286	N.S.
Jun-95	N.S.	6.700	0.806	0.300	N.S.
Sep-95	<b>0.360</b>	6.920	0.872	U	54.400
Dec-95	<b>0.236</b>	4.940	0.490	U	29.600
Mar-96	U	6.200	U	U	9.100
Jun-96	<b>0.324</b>	5.100	0.670	0.284	10.400
Sep-96	U	6.040	U	U	5.600
Dec-96	<b>0.370</b>	5.560	0.610	0.100	7.530
Mar-97	<b>0.100</b>	5.300	0.660	0.180	5.900
Jun-97	U	4.900	0.610	0.100	4.910
Sep-97	U	4.700	0.530	U	4.600
Dec-97	U	4.850	0.630	U	4.980
Feb-98	U	5.3	0.69	U	5.1
May-98	U	4.9	0.66	U	5
Aug-98	U	4.6	0.75	U	4.8
Nov-98	U	4.9	0.82	U	4.9
Feb-99	U	5	0.8	0.13	5
May-99	U	4.4	0.86	0.27	4.6
Aug-99	U	4.6	0.75	0.14	5
Nov-99	U	U	U	U	U
Mar-00	U	4.9	0.89	U	5.5
May-00	U	4.5	0.86	U	U
Aug-00	U	4.8	0.88	0.14	5.5
Nov-00	U	4.6	0.51	0.11	5.3
Feb-01	U	4.5	0.95	U	4.8
May-01	U	4.2	1.07	0.11	4.5
Aug-01	U	3.8	0.82	0.13	4.6
Nov-01	U	4.2	6.3	U	4.7
Mar-02	U	4.2	1.01	U	4.6
May-02	N.S.	4.5	N.S.	N.S.	5.6
Jul-02	N.S.	4.2	N.S.	N.S.	5
Nov-02	U	4.3	0.63	U	5.3
Mar-03	U	4.8	0.73	0.13	5.7
May-03	U	4.2	0.94	U	5.2

TEST 2  
STATISTICS FOR PHASE IV PONDS & POND 8E (WMU 8 AND 11)

<b>Fluoride</b>					
<u>Date</u>	<u>Upgradient Well</u>		<u>Downgradient Wells</u>		
	<u>Well 167</u>	<u>Well 104</u>	<u>Well 114</u>	<u>Well 131</u>	<u>Well 168</u>
Aug-03	U	4.3	0.7	U	5
Nov-03	U	4.4	0.85	U	4.9
Mar-04	U	4.4	0.89	U	5.2
May-04	U	4.4	0.91	U	5.2
Aug-04	U	4.2	0.82	U	5.3
Nov-04	<b>1.3</b>	4.2	0.86	U	5.6
Mar-05	U	4.7	0.88	U	6.2
May-05	U	4.6	N.S.	U	5
Aug-05	U	4.6	0.93	U	6.4
Nov-05	U	4.1	0.65	U	5.6
Feb-06	U	4.2	0.92	U	5.4
May-06	U	4	0.71	73.6	4.8
Aug-06	U	3.9	0.889	U	4.6
Nov-06	U	3.8	0.813	U	4.2
Feb-07	<b>1.5</b>	3.8	0.895	U	4.5
May-07	U	3.9	0.858	U	4.7
Aug-07	U	3.8	0.833	U	4.7
Nov-07	U	3.8	0.759	U	4.4
Feb-08	U	3.9	0.93	U	5.6
May-08	U	3.9	0.5	U	5
Aug-08	U	3.6	1	U	4.4
Nov-08	U	3.8	0.61	U	4.8
Feb-09	U	3.8	0.9	U	5.6
May-09	U	3.8	0.9	U	5.5
Aug-09	U	3.5	0.78	U	4.7
Nov-09	U	3.8	0.7	U	5.1
Feb-10	U	3.7	0.94	U	4.95
Apr-10	U	3.9	0.9	U	4.95
Jul-10	U	2.9	0.94	U	5.075
Nov-10	U	3.5	0.83	U	5.15
Feb-11	U	3.6	0.85	U	4.6
Apr-11	U	3.5	0.94	U	4.1
Aug-11	U	3.6	0.95	U	3.4
Nov-11	U	3.4	0.84	U	3.9
Feb-12	<i>U</i>	<i>5.1</i>	<i>1</i>	<i>0.54</i>	<i>7</i>
May-12	<b>1.5</b>	3.3	0.93	0.056	1.6
Aug-12	<b>0.63</b>	3.4	1.1	U	4.4
Oct-12	<b>2.0</b>	3.3	0.82	U	4.5
Feb-13	<b>1.9</b>	3.3	0.86	U	4
May-13	<b>1.7</b>	3.3	1.3	U	4.2
Jul-13	<b>0.8</b>	3.2	1.1	90.8	4
Nov-13	<b>2.0</b>	1.8	0.96	U	3.2
Feb-14	<i>1.7</i>	<i>3.1</i>	<i>1.1</i>	<i>U</i>	<i>3.9</i>
Apr-14	<i>1.6</i>	<i>2.9</i>	<i>0.91</i>	<i>U</i>	<i>3.8</i>
Jul-14	<i>0.41</i>	<i>2.3</i>	<i>1.2</i>	<i>U</i>	<i>3.3</i>
Nov-14	<i>1.6</i>	<i>2.8</i>	<i>0.95</i>	<i>U</i>	<i>4.0</i>

TEST 2  
STATISTICS FOR PHASE IV PONDS & POND 8E (WMU 8 AND 11)

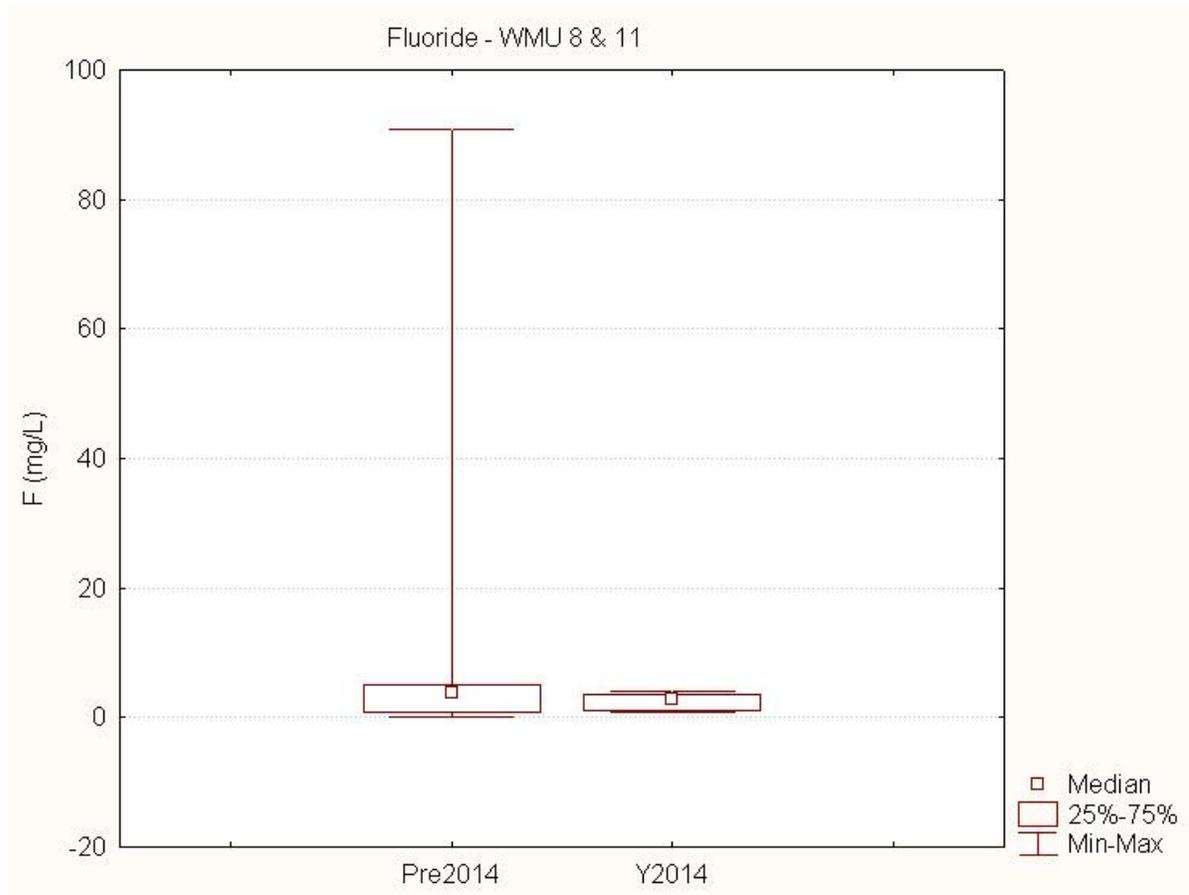
<b>Fluoride</b>					
<u>Date</u>	<b>Upgradient Well</b>	<b>Downgradient Wells</b>			
	<u>Well 167</u>	<u>Well 104</u>	<u>Well 114</u>	<u>Well 131</u>	<u>Well 168</u>
<b>Test 2 Results</b>					
	<b>Well 167</b>	Well 104	Well 114	Well 131	Well 168
Pre-2014 Mean	<b>1.0514</b>	5.1088	0.8765	5.7490	6.0992
2014 Mean	<b>1.3275</b>	2.7750	1.0400	#N/A	3.7500
<b>1991-2014 Statistical Summary</b>					
Mean	<b>1.11</b>	5.01	0.88	5.75	5.98
Median	<b>1.40</b>	4.40	0.84	0.20	4.97
Standard Deviation	<b>0.69</b>	2.44	0.60	20.91	6.40
Kurtosis	<b>-1.75</b>	13.87	76.59	13.00	46.96
Skewness	<b>-0.18</b>	3.21	8.47	3.73	6.62
Minimum	<b>0.10</b>	1.80	0.49	0.06	1.60
Maximum	<b>2.00</b>	19.00	6.30	90.80	54.40
Count	<b>18</b>	93	88	30	76
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.            N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics.            All concentrations in mg/l.</p>					

# WMU 8 & 11 TEST 3 FLUORIDE

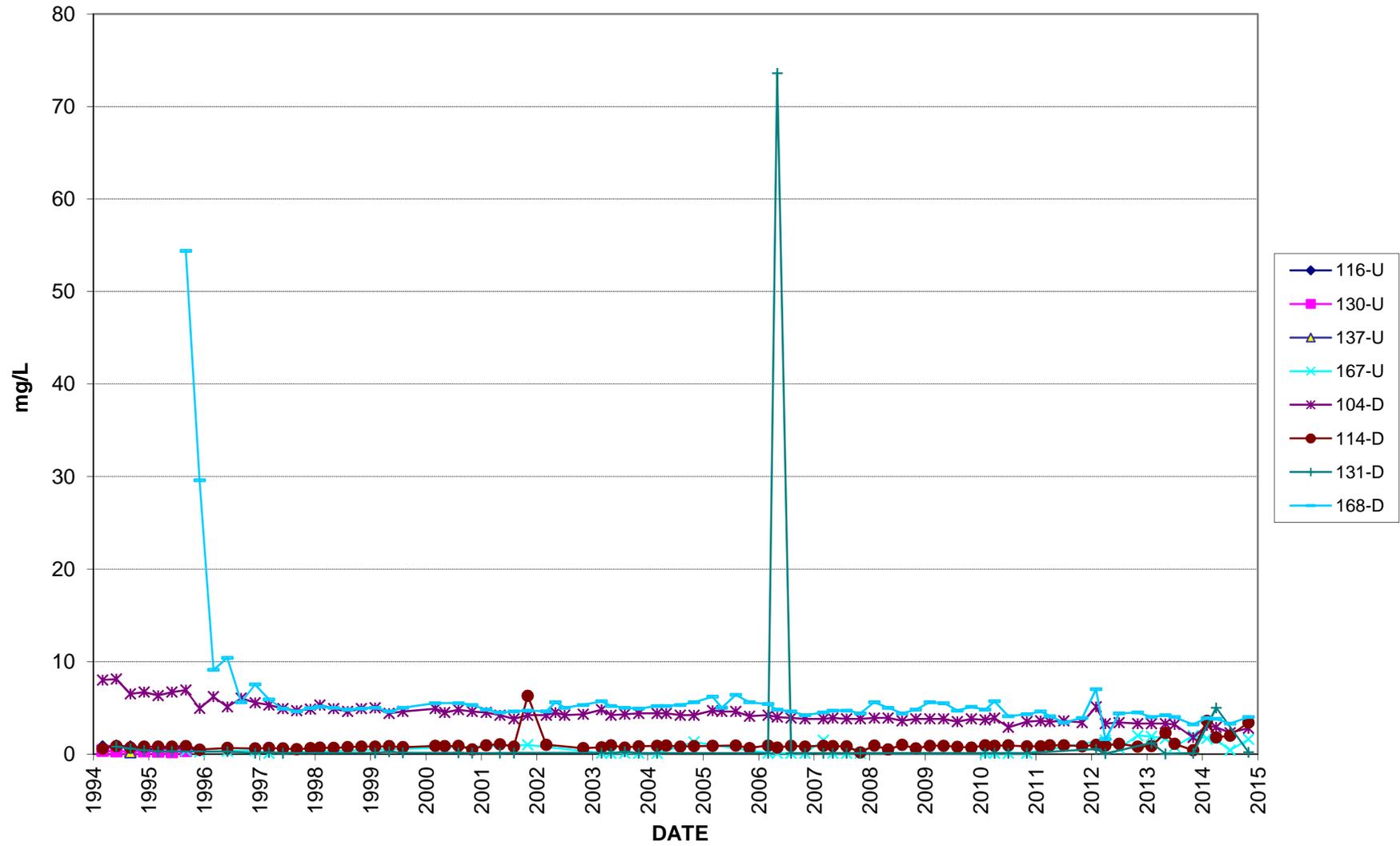
## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Pre-2014	275	3.80	39852.5	1397.5	0.897	0.37
Year 2014	12	2.85	1475.5			

**Summary:** For downgradient wells, the median of Pre-2014 fluoride concentration is not significantly different from the median of Year 2014 fluoride concentration.



### Fluoride in Groundwater (WMU 8 & 11)

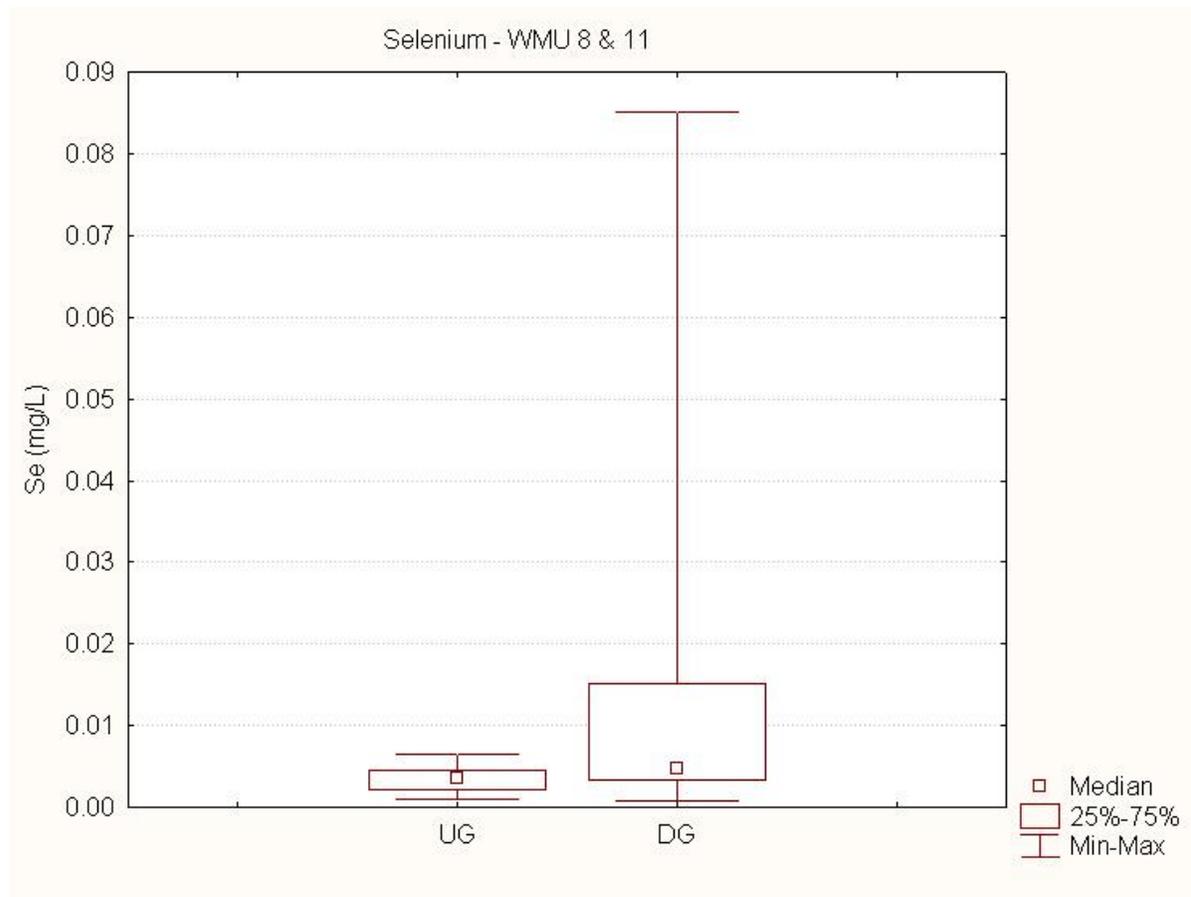


# WMU 8 & 11 TEST 1 SELENIUM

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	32	0.0036	2682.5	2154.5	-3.85	0.0001
Downgradient	232	0.0048	32297.5			

**Summary:** The median selenium concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



## STATISTICS FOR PHASE IV PONDS &amp; POND 8E (WMU 8 AND 11)

<b>Selenium</b>					
<u>Date</u>	<b>Upgradient Well</b>	<b>Downgradient Wells</b>			
	<u>Well 167</u>	<u>Well 104</u>	<u>Well 114</u>	<u>Well 131</u>	<u>Well 168</u>
Sep-91	N.S.	0.002	0.002	0.002	N.S.
Dec-91	N.S.	0.002	0.003	0.003	N.S.
Mar-92	N.S.	0.002	0.002	0.003	N.S.
Jun-92	N.S.	U	U	U	N.S.
Sep-92	N.S.	U	U	0.001	N.S.
Dec-92	N.S.	0.002	U	0.003	N.S.
Mar-93	N.S.	0.0040	0.0037	0.0060	N.S.
Jun-93	N.S.	U	0.0026	U	N.S.
Sep-93	N.S.	0.0030	0.0028	0.0050	N.S.
Dec-93	N.S.	0.0020	U	0.0040	N.S.
Mar-94	N.S.	U	U	U	N.S.
Jun-94	N.S.	U	0.0074	U	N.S.
Sep-94	N.S.	U	U	U	N.S.
Dec-94	N.S.	U	U	0.0020	N.S.
Mar-95	N.S.	U	0.0020	0.0020	N.S.
Jun-95	N.S.	U	0.0050	U	N.S.
Sep-95	U	U	U	U	0.0120
Dec-95	<b>0.0030</b>	U	U	0.0060	0.0140
Mar-96	U	U	U	U	0.0200
Jun-96	<b>0.0040</b>	U	U	0.0040	0.0170
Sep-96	U	0.0040	0.0034	0.0040	0.0170
Dec-96	U	0.0040	0.0039	U	0.0170
Mar-97	<b>0.0059</b>	U	0.0042	0.0087	0.0180
Jun-97	U	U	U	0.0054	0.0200
Sep-97	U	U	U	U	0.0200
Dec-97	<b>0.0037</b>	U	U	0.0034	0.0170
Feb-98	U	U	0.0043	0.0052	0.0190
May-98	<b>0.0035</b>	0.0036	U	U	0.0160
Aug-98	U	U	0.0048	U	0.0150
Nov-98	U	0.0080	0.0043	U	0.0130
Feb-99	U	0.0037	U	0.0056	0.0190
May-99	U	U	U	U	0.0160
Aug-99	U	0.0038	0.0041	0.0049	0.0158
Nov-99	<b>0.0064</b>	U	U	0.0064	0.0171
Mar-00	U	U	U	U	0.0179
May-00	U	U	U	U	0.0152
Aug-00	U	U	U	U	0.0130
Nov-00	U	U	U	U	0.0158
Feb-01	U	U	0.0035	U	0.0144
May-01	<b>0.0058</b>	U	U	0.0061	0.0174
Aug-01	U	U	U	U	0.0109
Nov-01	U	0.0048	U	0.0042	0.0171
Mar-02	U	0.0040	U	0.0063	0.0148
May-02	<b>0.0061</b>	0.0044	0.0045	0.0054	0.0156
Jul-02	U	0.0050	U	0.0029	0.0159
Nov-02	<b>0.0046</b>	0.0048	0.0049	0.0049	0.0168
Mar-03	<b>0.0046</b>	0.0033	U	U	U
May-03	<b>0.0038</b>	U	0.0041	0.0064	0.0128
Aug-03	U	U	0.0047	0.0064	0.0150

## STATISTICS FOR PHASE IV PONDS &amp; POND 8E (WMU 8 AND 11)

<b>Selenium</b>					
<u>Date</u>	<u>Upgradient Well</u>		<u>Downgradient Wells</u>		
	<u>Well 167</u>	<u>Well 104</u>	<u>Well 114</u>	<u>Well 131</u>	<u>Well 168</u>
Nov-03	U	U	0.0050	0.0042	0.0130
Mar-04	<b>0.0040</b>	0.0033	0.0043	0.0054	0.0143
May-04	<b>0.0036</b>	0.0033	0.0034	0.0048	0.0153
Aug-04	U	U	U	U	0.0110
Nov-04	<b>0.0050</b>	0.0038	0.0050	0.0037	0.0136
Mar-05	U	0.0027	0.0042	0.0039	0.0150
May-05	U	U	0.0028	0.0040	0.0157
Aug-05	U	0.0042	0.0026	0.0039	0.0135
Nov-05	U	U	U	U	0.0148
Feb-06	U	0.0034	0.0038	0.0044	0.0133
May-06	<b>0.0041</b>	U	0.0043	0.0044	0.0157
Aug-06	<b>0.0052</b>	0.0069	0.0037	0.0081	0.0242
Nov-06	<b>0.0030</b>	U	0.0034	0.0035	0.0269
Feb-07	U	U	U	0.0042	0.0264
May-07	<b>0.0040</b>	0.0041	0.0043	0.0074	0.0279
Aug-07	<b>0.0045</b>	0.0046	0.0039	0.0047	0.0297
Nov-07	U	0.0029	U	U	0.0346
Feb-08	U	0.0039	0.0044	U	0.0309
May-08	<b>0.0027</b>	U	U	0.0052	0.0335
Aug-08	U	U	U	U	0.0365
Nov-08	U	U	U	U	0.0398
Feb-09	U	0.0046	U	0.0063	0.0483
May-09	U	0.0064	U	U	0.0480
Aug-09	U	0.0063	0.0054	U	0.0611
Nov-09	U	U	U	U	0.0674
Feb-10	U	U	U	U	0.0711
Apr-10	U	U	U	U	0.0734
Jul-10	U	U	U	0.0044	0.0606
Nov-10	U	U	0.0046	U	0.0765
Feb-11	U	U	U	U	0.0704
Apr-11	U	0.0051	0.0054	U	0.0761
Aug-11	U	0.0041	0.0053	U	0.0800
Nov-11	U	0.0057	U	0.0043	0.0820
Feb-12	<b>0.0010</b>	0.0018	0.0013	0.0007	0.0412
May-12	<b>0.0015</b>	0.0025	0.0019	0.0011	0.0586
Aug-12	<b>0.0019</b>	0.0031	0.0021	0.0008	0.0700
Oct-12	<b>0.0020</b>	0.0030	0.0019	0.0011	0.0760
Feb-13	<b>0.0021</b>	0.0035	0.0026	0.0011	0.0820
May-13	<b>0.0022</b>	0.0037	0.0027	0.0011	0.0068
Jul-13	<b>0.0021</b>	0.0030	0.0022	0.0009	0.0730
Nov-13	<b>0.0020</b>	0.0033	0.0025	U	0.0850
Feb-14	<b>0.0018</b>	<b>0.0033</b>	<b>0.0022</b>	<b>0.0007</b>	<b>0.0670</b>
Apr-14	<b>0.0022</b>	<b>0.0037</b>	<b>0.0021</b>	<b>0.0008</b>	<b>0.0700</b>
Jul-14	<b>0.0024</b>	<b>0.0035</b>	<b>0.0024</b>	<b>0.0010</b>	<b>0.0840</b>
Nov-14	<b>0.0018</b>	<b>0.0028</b>	<b>0.0023</b>	U	<b>0.0650</b>

## STATISTICS FOR PHASE IV PONDS &amp; POND 8E (WMU 8 AND 11)

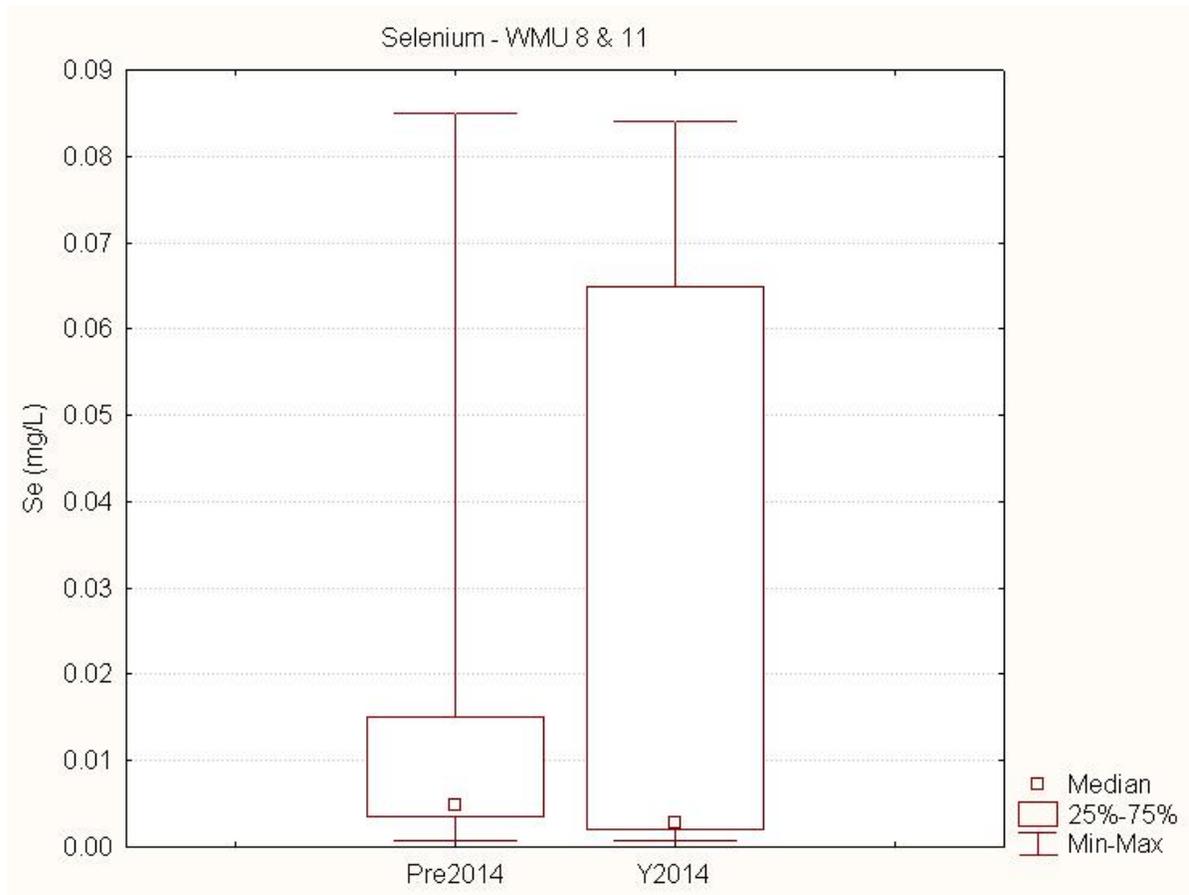
<b>Selenium</b>					
<u>Date</u>	<b>Upgradient Well</b>	Downgradient Wells			
	<b><u>Well 167</u></b>	<u>Well 104</u>	<u>Well 114</u>	<u>Well 131</u>	<u>Well 168</u>
<b>Test 2 Results</b>					
	<b>Well 167</b>	Well 104	Well 114	Well 131	Well 168
Pre-2014 Mean	<b>0.0035</b>	0.0039	0.0037	0.0042	0.0314
2014 Mean	<b>0.0021</b>	0.0033	0.0023	0.0008	0.0715
<b>1991-2014 Statistical Summary</b>					
Mean	<b>0.0035</b>	0.0038	0.0036	0.0040	0.033
Median	<b>0.0036</b>	0.0037	0.0037	0.0042	0.018
Standard Deviation	<b>0.0015</b>	0.0013	0.0012	0.0020	0.025
Kurtosis	<b>-0.890</b>	1.626	0.125	-0.585	-0.798
Skewness	<b>0.358</b>	1.032	0.374	-0.039	0.927
Minimum	<b>0.0010</b>	0.0018	0.0013	0.0007	0.0068
Maximum	<b>0.0064</b>	0.0080	0.0074	0.0087	0.0850
Count	<b>32</b>	48	51	56	77
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set. N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics. All concentrations in mg/l.					

## WMU 8 & 11 TEST 3 SELENIUM

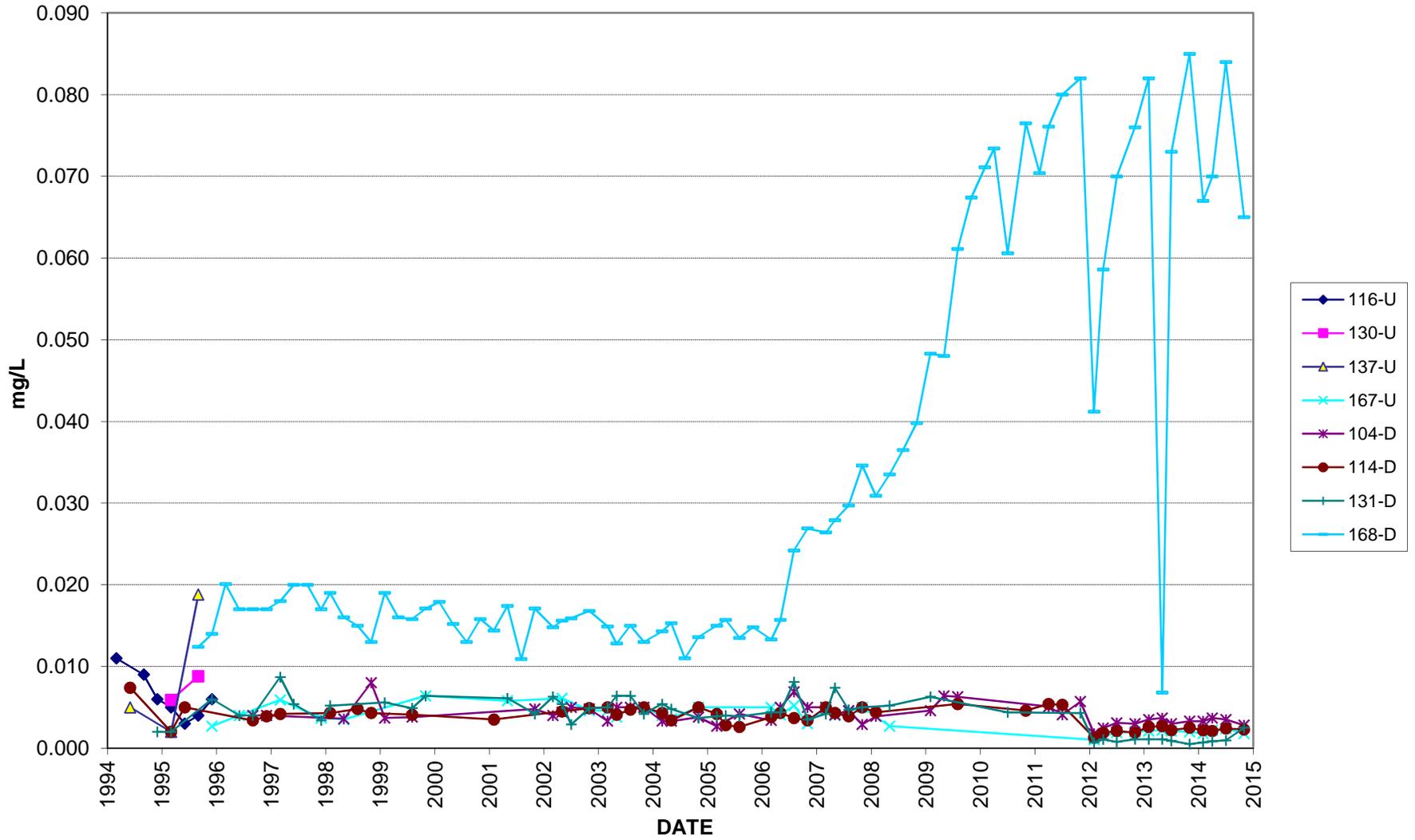
### *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Pre-2014	217	0.0048	25773.5	1134.5	1.96	0.0499
Year 2014	15	0.0028	1254.5			

**Summary:** For downgradient wells, the median of Pre-2014 selenium concentration is significantly higher than the median of Year 2014 selenium concentration.



### Selenium in Groundwater (WMU 8 & 11)



# **POND 9E**

## **Waste Management Unit 9**

**Note:**

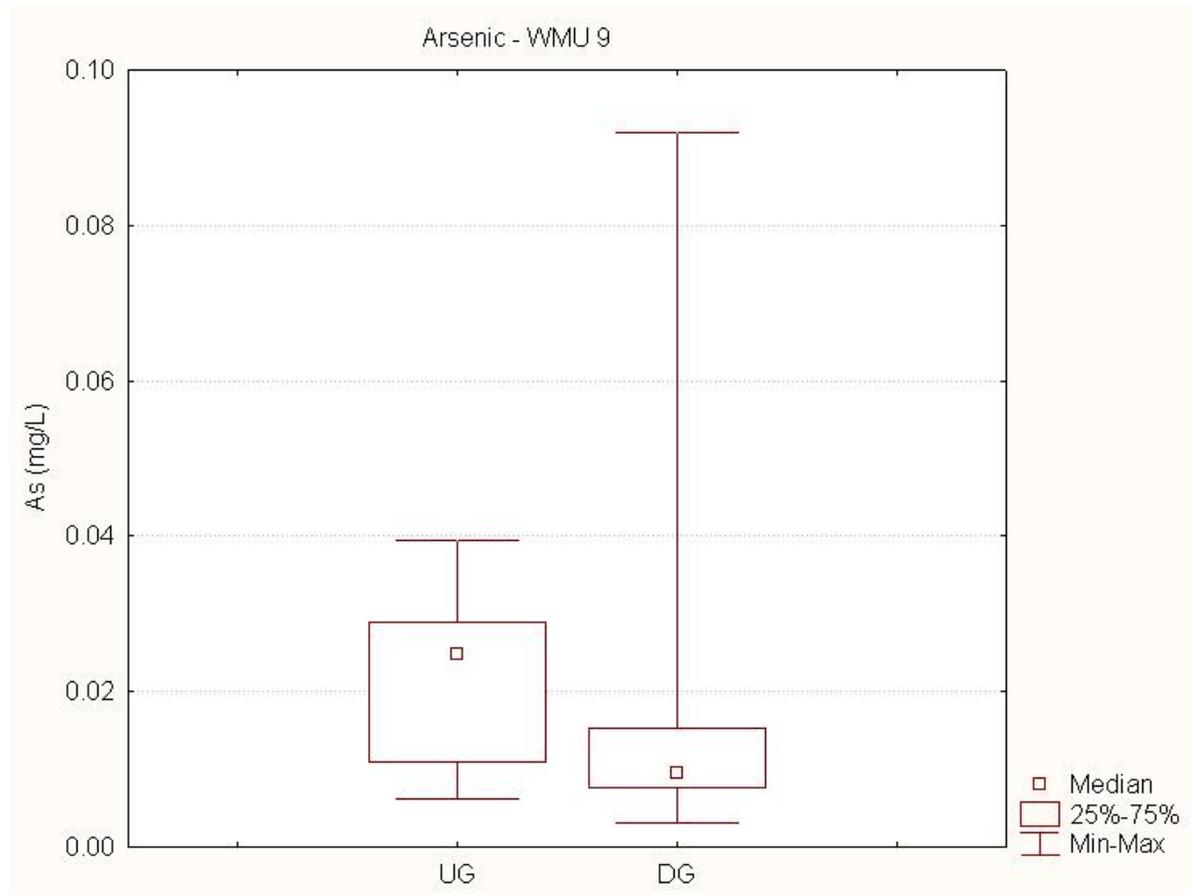
- 1. Time series plot scales are variable depending on the concentrations.**
- 2. Undetected values are not plotted on time series plots**

# WMU 9 TEST 1 ARSENIC

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	172	0.025	47840.5	9005.5	9.92	<0.0001
Downgradient	244	0.0096	38895.5			

**Summary:** The median arsenic concentration of downgradient (DG) wells is statistically lower than the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR POND 9E (WMU 9)

**Arsenic**

Date	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	Well 113	Well 124	Well 126	Well 127	Well 128
Sep-91	0.0366	0.0140	0.0080	0.0120	0.0250
Dec-91	0.0382	0.0160	0.0080	0.0120	0.0240
Mar-92	0.0349	0.0150	0.0080	0.0110	0.0230
Jun-92	0.0308	0.0170	U	0.0920	0.0250
Sep-92	0.0303	U	U	0.0120	0.0240
Dec-92	0.0321	U	U	U	0.0260
Mar-93	0.0394	0.0130	0.0130	0.0060	0.0250
Jun-93	0.0291	0.0120	0.0100	0.0080	0.0240
Sep-93	0.0350	0.0080	0.0060	0.0090	0.0190
Dec-93	0.0276	0.0120	0.0080	0.0100	0.0180
Mar-94	0.0372	U	U	U	0.0240
Jun-94	0.0271	0.0100	0.0070	0.0090	0.0140
Sep-94	0.0198	0.0110	0.0080	0.0050	0.0190
Dec-94	0.0362	0.0100	0.0100	0.0070	0.0180
Mar-95	0.0250	0.0140	0.0100	0.0120	0.0200
Jun-95	0.0257	0.0130	U	U	0.0200
Sep-95	U	0.0087	0.0060	0.0040	0.0140
Dec-95	0.0267	U	U	U	U
Mar-96	0.0281	0.0110	0.0080	0.0090	0.0190
Jun-96	0.0278	0.0120	0.0070	0.0090	0.0210
Sep-96	0.0320	0.0130	0.0110	0.0110	0.0220
Dec-96	U	U	U	0.0120	U
Mar-97	0.0270	0.0120	0.0069	0.0077	0.0170
Jun-97	0.0320	U	U	U	0.0200
Sep-97	0.0350	0.0100	0.0120	0.0072	0.0190
Dec-97	0.0290	U	U	U	U
Feb-98	0.0270	U	U	U	0.0190
May-98	0.0300	0.0110	0.0079	0.0096	0.0200
Aug-98	0.0270	0.0150	0.0089	0.0094	0.0200
Nov-98	0.0290	0.0130	0.0059	0.0096	0.0200
Feb-99	0.0300	0.0140	0.0110	0.0098	0.0200
May-99	0.0340	0.0130	U	U	0.0210
Aug-99	0.0281	0.0111	0.0062	0.0075	0.0195
Nov-99	0.0311	0.0139	0.0091	0.0097	0.0194
Mar-00	0.0305	U	U	U	0.0179
May-00	0.0306	0.0102	0.0071	0.0088	0.0170
Aug-00	0.0286	0.0131	U	U	0.0184
Nov-00	0.0337	0.0139	0.0095	0.0106	0.0224
Feb-01	0.0303	0.0102	0.0057	0.0096	0.0177
May-01	0.0307	0.0113	0.0076	0.0120	0.0200
Aug-01	0.0275	0.0130	0.0092	0.0083	0.0218
Nov-01	0.0281	0.0114	0.0077	0.0103	0.0182
Mar-02	0.0313	0.0111	0.0079	0.0087	0.0179
May-02	0.0290	U	U	U	0.0168
Jul-02	0.0316	U	U	U	0.0218
Nov-02	0.0298	0.0111	0.0089	0.0072	0.0166
Mar-03	0.0282	U	U	U	U
May-03	0.0286	0.0111	0.0075	0.0081	0.0173
Aug-03	0.0292	0.0115	U	U	0.0179

TEST 2  
STATISTICS FOR POND 9E (WMU 9)

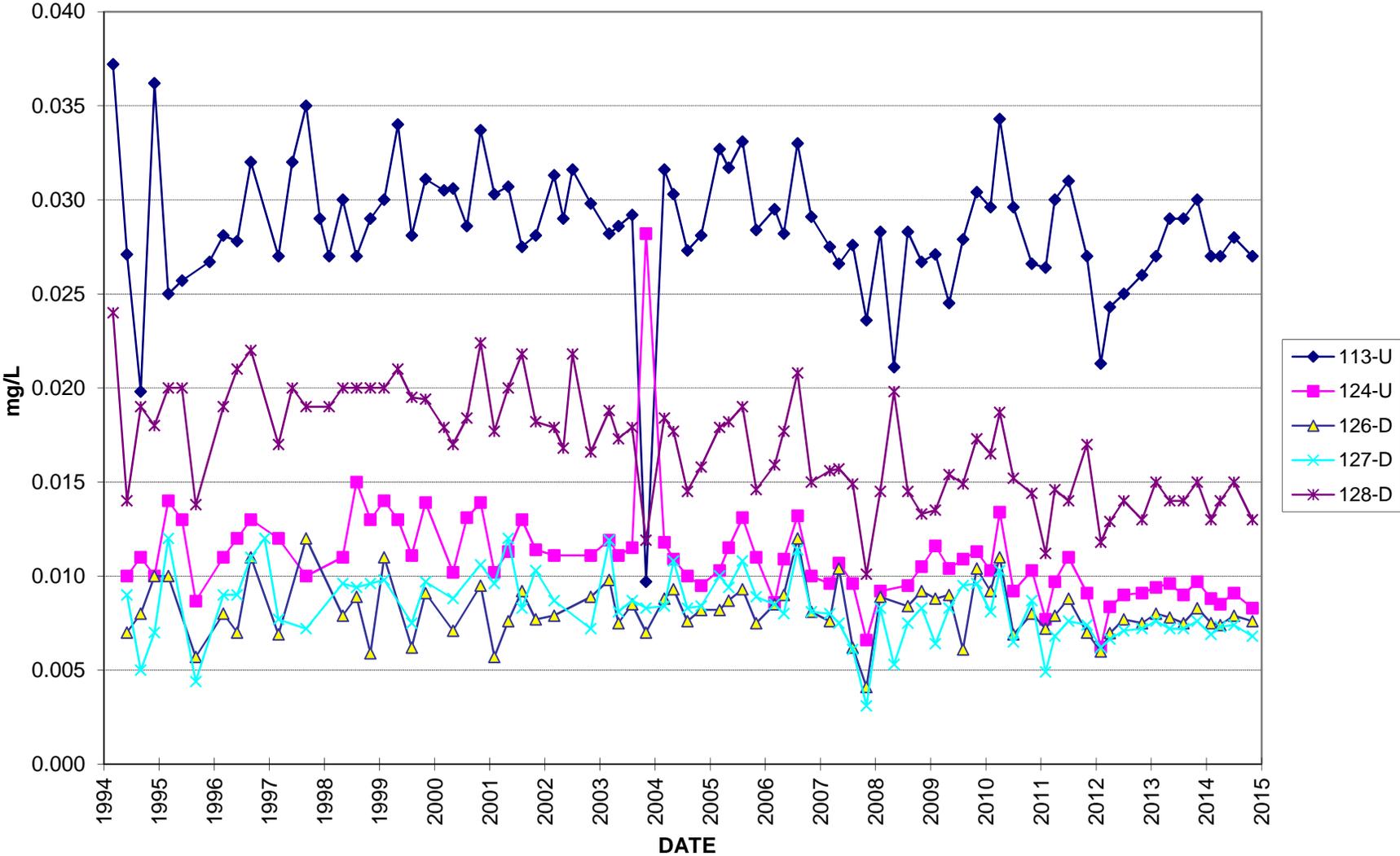
**Arsenic**

Date	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	Well 113	Well 124	Well 126	Well 127	Well 128
Nov-03	0.0097	0.0282	0.0070	0.0083	0.0119
Mar-04	0.0316	0.0118	0.0088	0.0084	0.0184
May-04	0.0303	0.0109	0.0093	0.0108	0.0177
Aug-04	0.0273	0.0100	0.0076	0.0083	0.0145
Nov-04	0.0281	0.0095	0.0082	0.0084	0.0158
Mar-05	0.0327	0.0103	0.0082	0.0100	0.0179
May-05	0.0317	0.0115	0.0087	0.0094	0.0182
Aug-05	0.0331	0.0131	0.0093	0.0108	0.0190
Nov-05	0.0284	0.0110	0.0075	0.0089	0.0146
Feb-06	0.0295	0.0086	0.0085	0.0085	0.0159
May-06	0.0282	0.0109	0.0090	0.0080	0.0177
Aug-06	0.0330	0.0132	0.0120	0.0114	0.0208
Nov-06	0.0291	0.0100	0.0081	0.0081	0.0150
Feb-07	0.0275	0.0096	0.0076	0.0080	0.0156
May-07	0.0266	0.0107	0.0104	0.0075	0.0157
Aug-07	0.0276	0.0096	0.0062	0.0061	0.0149
Nov-07	0.0236	0.0066	0.0041	0.0031	0.0101
Feb-08	0.0283	U	U	U	0.0145
May-08	0.0211	U	U	0.0053	0.0198
Aug-08	0.0283	0.0095	0.0084	0.0075	0.0145
Nov-08	0.0267	0.0105	0.0092	0.0083	0.0133
Feb-09	0.0271	0.0116	0.0088	0.0064	0.0135
May-09	0.0245	0.0104	0.0090	0.0083	0.0154
Aug-09	0.0279	0.0109	0.0061	0.0095	0.0149
Nov-09	0.0304	0.0113	0.0104	0.0096	0.0173
Feb-10	0.0296	0.0103	0.0092	0.0081	0.0165
Apr-10	0.0343	0.0134	0.0110	0.0103	0.0187
Jul-10	0.0296	0.0092	0.0069	0.0065	0.0152
Nov-10	0.0266	0.0103	0.0080	0.0087	0.0144
Feb-11	0.0264	0.0077	0.0072	0.0049	0.0112
Apr-11	0.0300	0.0097	0.0079	0.0068	0.0146
Jul-11	0.0310	0.0110	0.0088	0.0076	0.0140
Nov-11	0.0270	0.0091	0.0070	0.0074	0.0170
Feb-12	0.0213	0.0062	0.0060	0.0062	0.0118
May-12	0.0243	0.0084	0.0070	0.0067	0.0129
Aug-12	0.0250	0.0090	0.0077	0.0071	0.0140
Oct-12	0.0260	0.0091	0.0075	0.0072	0.0130
Feb-13	0.0270	0.0094	0.0080	0.0076	0.0150
May-13	0.0290	0.0096	0.0078	0.0072	0.0140
Aug-13	0.0290	0.0090	0.0075	0.0072	0.0140
Nov-13	0.0300	0.0097	0.0083	0.0076	0.0150
Feb-14	0.0270	0.0088	0.0075	0.0069	0.0130
Apr-14	0.0270	0.0085	0.0074	0.0073	0.0140
Jul-14	0.0280	0.0091	0.0079	0.0074	0.0150
Nov-14	0.0270	0.0083	0.0076	0.0068	0.0130

TEST 2  
STATISTICS FOR POND 9E (WMU 9)

<b>Arsenic</b>					
Date	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	Well 113	Well 124	Well 126	Well 127	Well 128
<b>Test 2 Results</b>	<b>Well 113</b>	<b>Well 124</b>	Well 126	Well 127	Well 128
Pre-2014 Mean	<b>0.0291</b>	<b>0.0113</b>	0.0082	0.0096	0.0178
2014 Mean	<b>0.0273</b>	<b>0.0087</b>	0.0076	0.0071	0.0138
<b>1991-2014 Statistical Summary</b>					
Mean	<b>0.029</b>	<b>0.011</b>	0.008	0.009	0.018
Median	<b>0.029</b>	<b>0.011</b>	0.008	0.008	0.018
Standard Deviation	<b>0.004</b>	<b>0.003</b>	0.002	0.010	0.004
Kurtosis	<b>5.558</b>	<b>16.098</b>	1.084	72.766	-0.391
Skewness	<b>-0.904</b>	<b>2.915</b>	0.579	8.363	0.352
Minimum	<b>0.010</b>	<b>0.006</b>	0.004	0.003	0.010
Maximum	<b>0.039</b>	<b>0.028</b>	0.013	0.092	0.026
Count	<b>92</b>	<b>80</b>	75	79	90
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.                      N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics.                      All concentrations in mg/l.</p>					

### Arsenic in Groundwater (WMU 9)

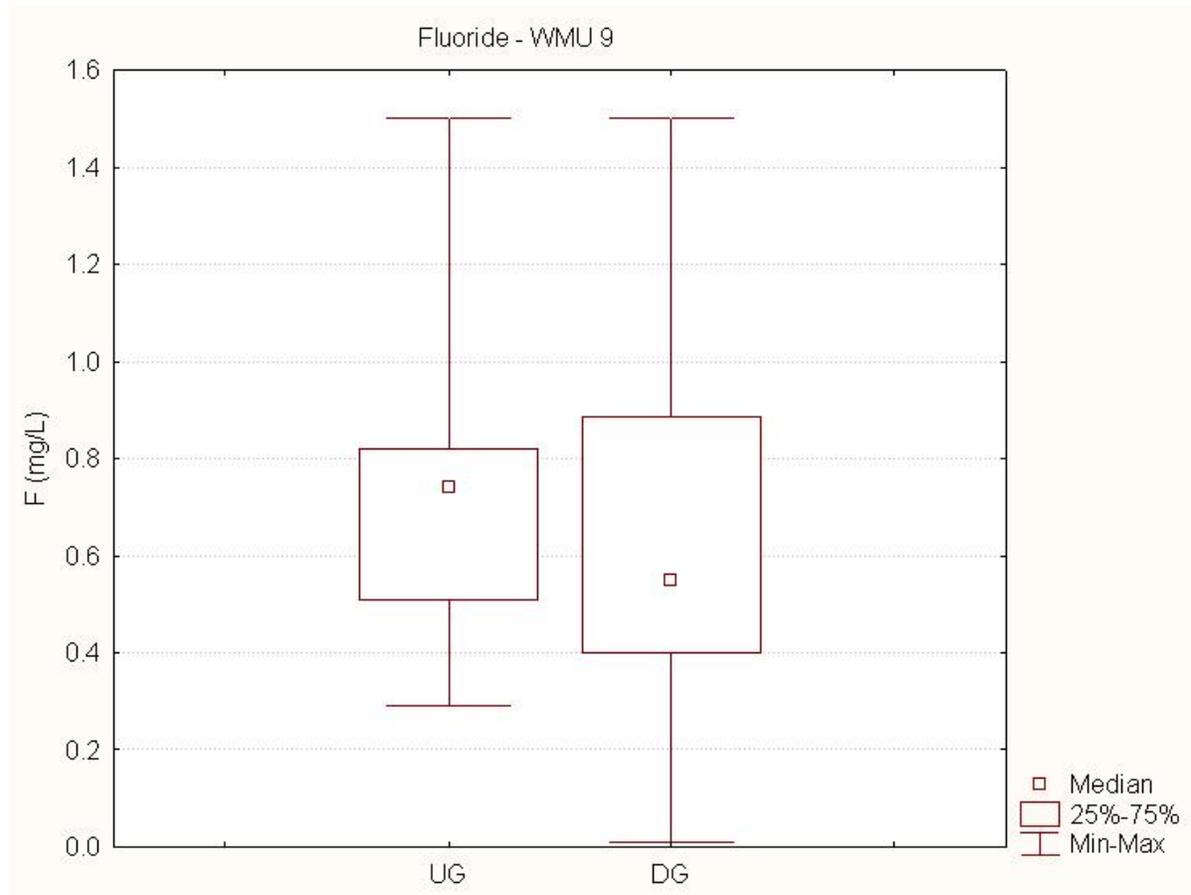


# WMU 9 TEST 1 FLUORIDE

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	180	0.74	45331.0	19919.0	3.35	0.0008
Downgradient	272	0.55	57047.0			

**Summary:** The median fluoride concentration of downgradient (DG) wells is statistically lower than the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR POND 9E (WMU 9)

**Fluoride**

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	<u>Well 113</u>	<u>Well 124</u>	<u>Well 126</u>	<u>Well 127</u>	<u>Well 128</u>
Sep-91	<b>0.8</b>	<b>0.7</b>	0.8	0.2	0.2
Dec-91	<b>0.96</b>	<b>0.86</b>	0.96	0.32	0.33
Mar-92	<b>1</b>	<b>0.938</b>	1.07	0.389	0.34
Jun-92	<b>0.772</b>	<b>0.757</b>	0.842	0.249	0.275
Sep-92	<b>0.77</b>	<b>0.76</b>	0.87	0.29	0.28
Dec-92	<b>0.8</b>	<b>0.8</b>	0.9	0.3	0.3
Mar-93	<b>0.8</b>	<b>0.9</b>	0.9	0.3	0.3
Jun-93	<b>0.8</b>	<b>0.8</b>	1	0.4	0.3
Sep-93	<b>0.8</b>	<b>0.8</b>	0.8	0.3	0.3
Dec-93	<b>0.7</b>	<b>0.8</b>	0.9	0.4	0.3
Mar-94	<b>0.8</b>	<b>0.8</b>	1	0.4	0.3
Jun-94	<b>0.76</b>	<b>0.846</b>	0.96	0.38	0.324
Sep-94	<b>0.7</b>	<b>0.9</b>	0.9	0.4	0.4
Dec-94	<b>0.8</b>	<b>0.806</b>	0.9	0.4	0.3
Mar-95	<b>0.764</b>	<b>0.786</b>	0.852	0.374	0.296
Jun-95	<b>0.704</b>	<b>0.864</b>	0.878	0.38	0.308
Sep-95	<b>0.848</b>	<b>0.906</b>	0.974	0.486	0.368
Dec-95	<b>0.612</b>	<b>0.806</b>	0.836	0.418	0.322
Mar-96	U	U	0.78	0.406	U
Jun-96	<b>0.736</b>	<b>0.924</b>	0.986	0.504	0.416
Sep-96	U	U	U	U	U
Dec-96	<b>0.62</b>	<b>0.81</b>	0.87	0.42	0.33
Mar-97	<b>0.54</b>	<b>0.8</b>	0.89	0.42	0.28
Jun-97	<b>0.62</b>	<b>0.79</b>	0.88	0.45	0.28
Sep-97	<b>0.55</b>	<b>0.8</b>	0.89	0.48	0.32
Dec-97	<b>0.54</b>	<b>0.76</b>	0.84	0.44	0.3
Feb-98	<b>0.56</b>	<b>0.82</b>	0.85	0.5	0.5
May-98	<b>0.53</b>	<b>0.86</b>	0.93	0.48	0.48
Aug-98	<b>0.53</b>	<b>0.84</b>	0.94	0.47	0.47
Nov-98	<b>0.57</b>	<b>0.87</b>	0.91	0.49	0.49
Feb-99	<b>0.54</b>	<b>0.82</b>	0.93	0.51	0.35
May-99	<b>0.5</b>	<b>0.89</b>	0.84	0.49	0.32
Aug-99	<b>0.55</b>	<b>0.89</b>	0.9	0.53	0.38
Nov-99	U	U	U	U	U
Mar-00	<b>0.56</b>	<b>0.88</b>	0.95	0.57	0.39
May-00	U	U	U	U	U
Aug-00	<b>0.41</b>	<b>0.89</b>	0.94	0.4	0.27
Nov-00	<b>0.52</b>	<b>0.85</b>	0.92	0.52	0.4
Feb-01	<b>0.46</b>	<b>0.76</b>	0.84	0.47	0.34
May-01	<b>0.47</b>	<b>0.73</b>	0.9	0.79	0.37
Aug-01	<b>0.32</b>	<b>0.57</b>	0.59	0.3	0.23
Nov-01	<b>0.46</b>	<b>0.77</b>	0.88	0.62	0.43
Mar-02	<b>0.44</b>	<b>0.85</b>	0.91	0.55	0.41
May-02	<b>0.48</b>	<b>0.85</b>	0.91	0.55	0.38
Jul-02	<b>0.51</b>	<b>0.86</b>	0.96	0.56	0.44
Nov-02	<b>0.68</b>	<b>0.97</b>	0.99	0.82	0.46
Mar-03	<b>0.56</b>	<b>0.93</b>	1.1	0.64	0.02
May-03	<b>0.48</b>	<b>0.83</b>	0.92	0.58	0.42
Aug-03	<b>0.6</b>	<b>0.92</b>	1	0.57	0.47

TEST 2  
STATISTICS FOR POND 9E (WMU 9)

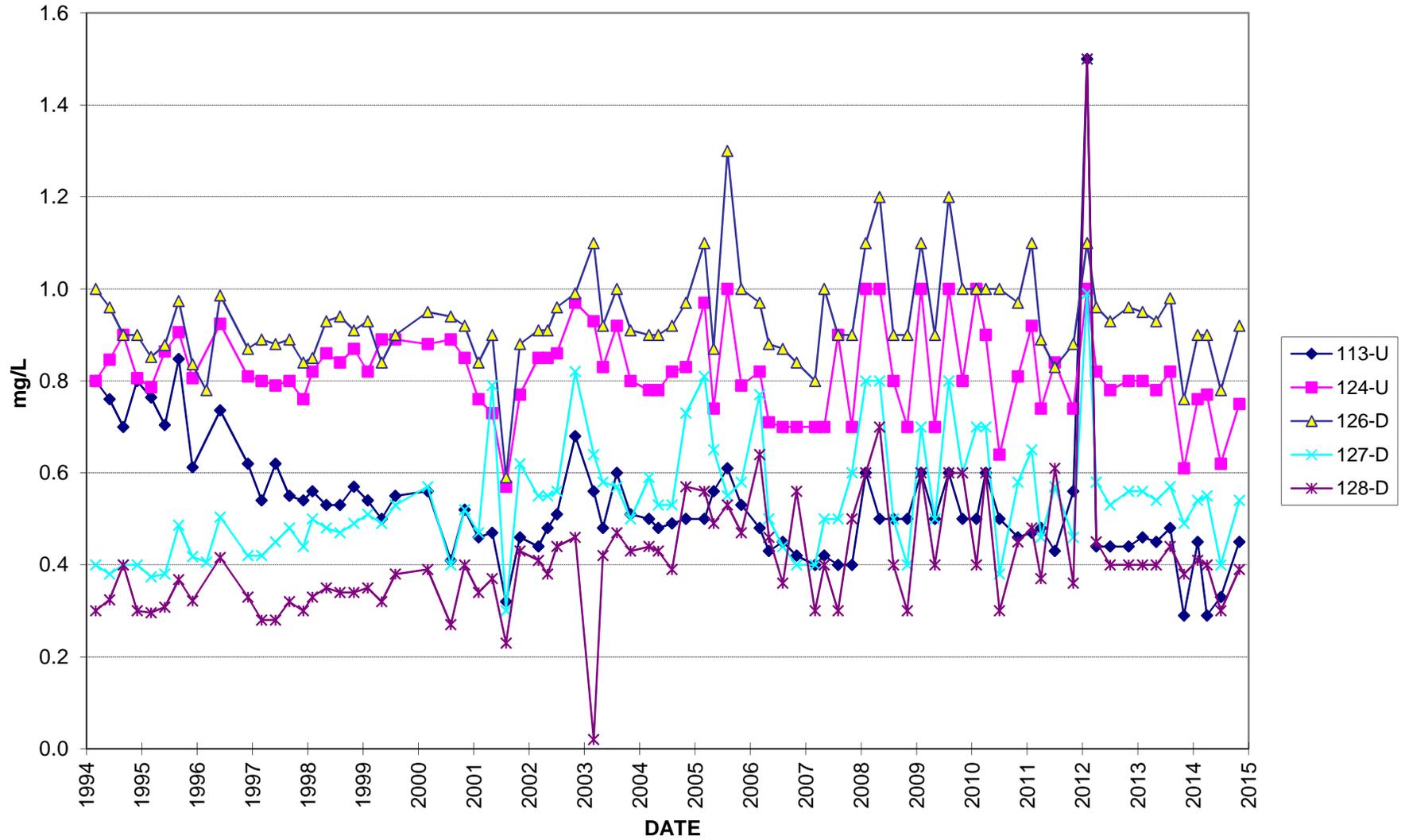
**Fluoride**

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	<u>Well 113</u>	<u>Well 124</u>	<u>Well 126</u>	<u>Well 127</u>	<u>Well 128</u>
Nov-03	<b>0.51</b>	<b>0.8</b>	0.91	0.5	0.43
Mar-04	<b>0.5</b>	<b>0.78</b>	0.9	0.59	0.44
May-04	<b>0.48</b>	<b>0.78</b>	0.9	0.53	0.43
Aug-04	<b>0.49</b>	<b>0.82</b>	0.92	0.53	0.39
Nov-04	<b>0.5</b>	<b>0.83</b>	0.97	0.73	0.57
Mar-05	<b>0.5</b>	<b>0.97</b>	1.1	0.81	0.56
May-05	<b>0.56</b>	<b>0.74</b>	0.87	0.65	0.49
Aug-05	<b>0.61</b>	<b>1</b>	1.3	0.55	0.53
Nov-05	<b>0.53</b>	<b>0.79</b>	1	0.58	0.47
Feb-06	<b>0.48</b>	<b>0.82</b>	0.97	0.77	0.64
May-06	<b>0.43</b>	<b>0.71</b>	0.88	0.5	0.46
Aug-06	<b>0.45</b>	<b>0.7</b>	0.87	0.44	0.36
Nov-06	<b>0.42</b>	<b>0.7</b>	0.84	0.4	0.56
Feb-07	<b>0.4</b>	<b>0.7</b>	0.8	0.4	0.3
May-07	<b>0.42</b>	<b>0.7</b>	1	0.5	0.4
Aug-07	<b>0.4</b>	<b>0.9</b>	0.9	0.5	0.3
Nov-07	<b>0.4</b>	<b>0.7</b>	0.9	0.6	0.5
Feb-08	<b>0.6</b>	<b>1</b>	1.1	0.8	0.6
May-08	<b>0.5</b>	<b>1</b>	1.2	0.8	0.7
Aug-08	<b>0.5</b>	<b>0.8</b>	0.9	0.5	0.4
Nov-08	<b>0.5</b>	<b>0.7</b>	0.9	0.4	0.3
Feb-09	<b>0.6</b>	<b>1</b>	1.1	0.7	0.6
May-09	<b>0.5</b>	<b>0.7</b>	0.9	0.5	0.4
Aug-09	<b>0.6</b>	<b>1</b>	1.2	0.8	0.6
Nov-09	<b>0.5</b>	<b>0.8</b>	1	0.6	0.6
Feb-10	<b>0.5</b>	<b>1</b>	1	0.7	0.4
Apr-10	<b>0.6</b>	<b>0.9</b>	1	0.7	0.6
Jul-10	<b>0.5</b>	<b>0.64</b>	1	0.38	0.3
Nov-10	<b>0.46</b>	<b>0.81</b>	0.97	0.58	0.45
Feb-11	<b>0.47</b>	<b>0.92</b>	1.1	0.65	0.48
Apr-11	<b>0.48</b>	<b>0.74</b>	0.89	0.46	0.37
Jul-11	<b>0.43</b>	<b>0.84</b>	0.83	0.57	0.61
Nov-11	<b>0.56</b>	<b>0.74</b>	0.88	0.46	0.36
Feb-12	<b>1.5</b>	<b>1</b>	1.1	0.99	1.5
May-12	<b>0.44</b>	<b>0.82</b>	0.96	0.58	0.45
Aug-12	<b>0.44</b>	<b>0.78</b>	0.93	0.53	0.4
Oct-12	<b>0.44</b>	<b>0.8</b>	0.96	0.56	0.4
Feb-13	<b>0.46</b>	<b>0.8</b>	0.95	0.56	0.4
May-13	<b>0.45</b>	<b>0.78</b>	0.93	0.54	0.4
Aug-13	<b>0.48</b>	<b>0.82</b>	0.98	0.57	0.44
Nov-13	<b>0.29</b>	<b>0.61</b>	0.76	0.49	0.38
Feb-14	<b>0.45</b>	<b>0.76</b>	0.90	0.54	0.41
Apr-14	<b>0.29</b>	<b>0.77</b>	0.90	0.55	0.40
Jul-14	<b>0.33</b>	<b>0.62</b>	0.78	0.40	0.30
Nov-14	<b>0.45</b>	<b>0.75</b>	0.92	0.54	0.39

TEST 2  
STATISTICS FOR POND 9E (WMU 9)

<b>Fluoride</b>					
<u>Date</u>	<b>Upgradient Wells</b>		<b>Downgradient Wells</b>		
	<b><u>Well 113</u></b>	<b><u>Well 124</u></b>	<u>Well 126</u>	<u>Well 127</u>	<u>Well 128</u>
<b>Test 2 Results</b>	<b>Well 113</b>	<b>Well 124</b>	Well 126	Well 127	Well 128
Pre-2014 Mean	<b>0.5745</b>	<b>0.8233</b>	0.9329	0.5163	0.4123
2014 Mean	<b>0.3800</b>	<b>0.7250</b>	0.8750	0.5075	0.3750
<b>1991-2014 Statistical Summary</b>					
Mean	<b>0.566</b>	<b>0.819</b>	0.930	0.516	0.411
Median	<b>0.510</b>	<b>0.806</b>	0.910	0.500	0.400
Standard Deviation	<b>0.174</b>	<b>0.093</b>	0.100	0.142	0.159
Kurtosis	<b>8.417</b>	<b>0.101</b>	3.022	0.880	24.022
Skewness	<b>2.152</b>	<b>0.033</b>	0.672	0.651	3.614
Minimum	<b>0.290</b>	<b>0.570</b>	0.590	0.200	0.020
Maximum	<b>1.500</b>	<b>1.000</b>	1.300	0.990	1.500
Count	<b>90</b>	<b>90</b>	91	91	90
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.                      N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics.                      All concentrations in mg/l.</p>					

### Fluoride in Groundwater (WMU 9)

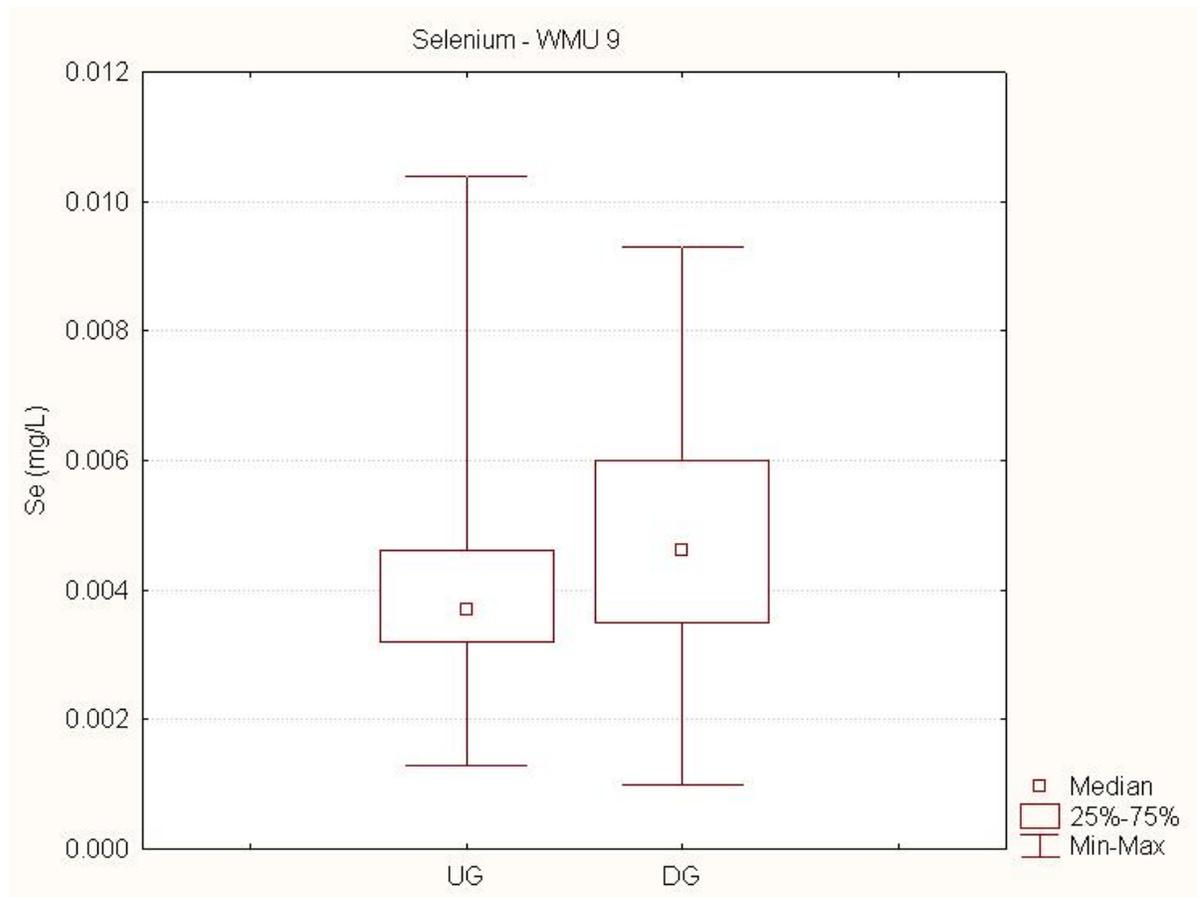


# WMU 9 TEST 1 SELENIUM

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	106	0.0037	12292.5	6621.5	-3.96	0.0001
Downgradient	174	0.0046	27047.5			

**Summary:** The median selenium concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR POND 9E (WMU 9)

**Selenium**

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	<u>Well 113</u>	<u>Well 124</u>	<u>Well 126</u>	<u>Well 127</u>	<u>Well 128</u>
Sep-91	0.0020	0.0040	0.0040	0.0020	0.0020
Dec-91	0.0033	0.0020	0.0030	0.0020	0.0040
Mar-92	0.0020	0.0020	0.0020	0.0030	0.0020
Jun-92	U	U	U	U	U
Sep-92	U	U	U	U	U
Dec-92	U	U	U	U	U
Mar-93	0.0047	U	0.0020	0.0010	0.0010
Jun-93	0.0013	0.0020	U	U	0.0020
Sep-93	0.0023	0.0030	0.0030	0.0060	0.0020
Dec-93	U	0.0020	U	0.0070	U
Mar-94	U	U	U	U	U
Jun-94	0.0076	U	U	U	U
Sep-94	U	U	0.0040	U	0.0040
Dec-94	0.0024	U	U	U	U
Mar-95	U	U	U	U	U
Jun-95	U	0.0020	U	0.0030	U
Sep-95	U	U	0.0020	U	U
Dec-95	U	U	U	0.0030	U
Mar-96	U	U	U	U	U
Jun-96	U	U	U	U	U
Sep-96	U	U	U	0.0050	U
Dec-96	0.0036	U	U	U	U
Mar-97	0.0061	0.0047	0.0053	0.0040	0.0046
Jun-97	0.0043	U	U	U	U
Sep-97	U	0.0042	U	U	0.0057
Dec-97	0.0062	U	U	0.0062	U
Feb-98	0.0036	0.0044	U	0.0049	0.0044
May-98	U	U	U	U	U
Aug-98	U	U	0.0050	0.0075	0.0047
Nov-98	0.0040	0.0028	0.0031	0.0037	0.0039
Feb-99	0.0036	0.0036	0.0037	0.0061	0.0034
May-99	0.0041	U	U	0.0049	U
Aug-99	0.0060	U	U	U	U
Nov-99	0.0049	U	U	U	U
Mar-00	U	U	U	0.0045	U
May-00	U	U	0.0035	0.0027	0.0026
Aug-00	0.0037	U	U	0.0068	U
Nov-00	U	U	0.0049	0.0084	0.0058
Feb-01	U	U	U	U	U
May-01	0.0046	U	U	0.0061	U
Aug-01	U	0.0037	0.0033	0.0074	0.0051
Nov-01	0.0038	U	0.0034	0.0068	0.0048
Mar-02	0.0034	0.0037	U	0.0042	U
May-02	0.0057	0.0041	0.0046	0.0052	0.0036
Jul-02	0.0047	0.0026	0.0024	0.0089	0.0040
Nov-02	U	U	U	0.0035	U
Mar-03	0.0037	U	0.0037	U	0.0050
May-03	U	0.0034	U	0.0044	0.0046
Aug-03	0.0046	0.0052	0.0042	0.0057	0.0040

TEST 2  
STATISTICS FOR POND 9E (WMU 9)

**Selenium**

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	<u>Well 113</u>	<u>Well 124</u>	<u>Well 126</u>	<u>Well 127</u>	<u>Well 128</u>
Nov-03	U	U	U	0.0040	U
Mar-04	<b>0.0038</b>	<b>0.0034</b>	U	0.0049	0.0035
May-04	<b>0.0039</b>	U	U	0.0065	0.0042
Aug-04	U	U	U	U	0.0026
Nov-04	U	<b>0.0033</b>	U	0.0038	U
Mar-05	<b>0.0032</b>	<b>0.0026</b>	U	0.0068	0.0039
May-05	<b>0.0024</b>	<b>0.0049</b>	0.0035	0.0044	0.0039
Aug-05	U	<b>0.0040</b>	U	0.0042	0.0032
Nov-05	<b>0.0039</b>	<b>0.0070</b>	0.0037	0.0053	0.0033
Feb-06	<b>0.0041</b>	U	0.0050	0.0064	0.0050
May-06	<b>0.0037</b>	<b>0.0041</b>	0.0027	0.0075	0.0060
Aug-06	<b>0.0066</b>	<b>0.0061</b>	0.0069	0.0092	0.0092
Nov-06	<b>0.0035</b>	<b>0.0029</b>	U	0.0059	0.0072
Feb-07	U	U	U	0.0047	U
May-07	<b>0.0041</b>	<b>0.0055</b>	0.0052	0.0071	0.0039
Aug-07	<b>0.0030</b>	U	U	U	0.0036
Nov-07	<b>0.0052</b>	U	U	0.0054	0.0044
Feb-08	<b>0.0041</b>	<b>0.0041</b>	U	0.0060	0.0077
May-08	U	U	U	0.0046	U
Aug-08	U	U	U	0.0069	U
Nov-08	U	<b>0.0045</b>	0.0049	0.0083	0.0066
Feb-09	<b>0.0080</b>	<b>0.0104</b>	U	0.0069	0.0058
May-09	U	U	0.0041	0.0075	U
Aug-09	U	<b>0.0054</b>	U	0.0072	0.0072
Nov-09	U	U	U	0.0044	0.0064
Feb-10	U	<b>0.0045</b>	U	0.0082	0.0059
Apr-10	U	U	U	0.0072	0.0043
Jul-10	<b>0.0042</b>	<b>0.0056</b>	U	0.0069	0.0054
Nov-10	U	<b>0.0045</b>	U	0.0071	0.0079
Feb-11	U	U	U	0.0053	U
Apr-11	<b>0.0043</b>	<b>0.0071</b>	0.0047	0.0077	0.0063
Jul-11	<b>0.0047</b>	<b>0.0048</b>	0.0054	0.0057	0.0054
Nov-11	<b>0.0061</b>	<b>0.0047</b>	0.0051	0.0093	0.0046
Feb-12	<b>0.0019</b>	<b>0.0014</b>	0.0014	0.0038	0.0027
May-12	<b>0.0025</b>	<b>0.0024</b>	0.0017	0.0045	0.0028
Aug-12	<b>0.0033</b>	<b>0.0032</b>	0.0024	0.0054	0.0044
Oct-12	<b>0.0038</b>	<b>0.0032</b>	0.0026	0.0068	0.0047
Feb-13	<b>0.0032</b>	<b>0.0033</b>	0.0023	0.0063	0.0056
May-13	<b>0.0037</b>	<b>0.0034</b>	0.0022	0.0058	0.0041
Aug-13	<b>0.0038</b>	<b>0.0032</b>	0.0026	0.0062	0.0044
Nov-13	<b>0.0037</b>	<b>0.0035</b>	0.0026	0.0068	0.0057
Feb-14	<i>0.0033</i>	<i>0.0031</i>	<i>0.0019</i>	<i>0.0058</i>	<i>0.0044</i>
Apr-14	<i>0.0045</i>	<i>0.0032</i>	<i>0.0021</i>	<i>0.0063</i>	<i>0.0040</i>
Jul-14	<i>0.0037</i>	<i>0.0033</i>	<i>0.0027</i>	<i>0.0068</i>	<i>0.0043</i>
Nov-14	<i>0.0033</i>	<i>0.0034</i>	<i>0.0025</i>	<i>0.0065</i>	<i>0.0044</i>

## STATISTICS FOR POND 9E (WMU 9)

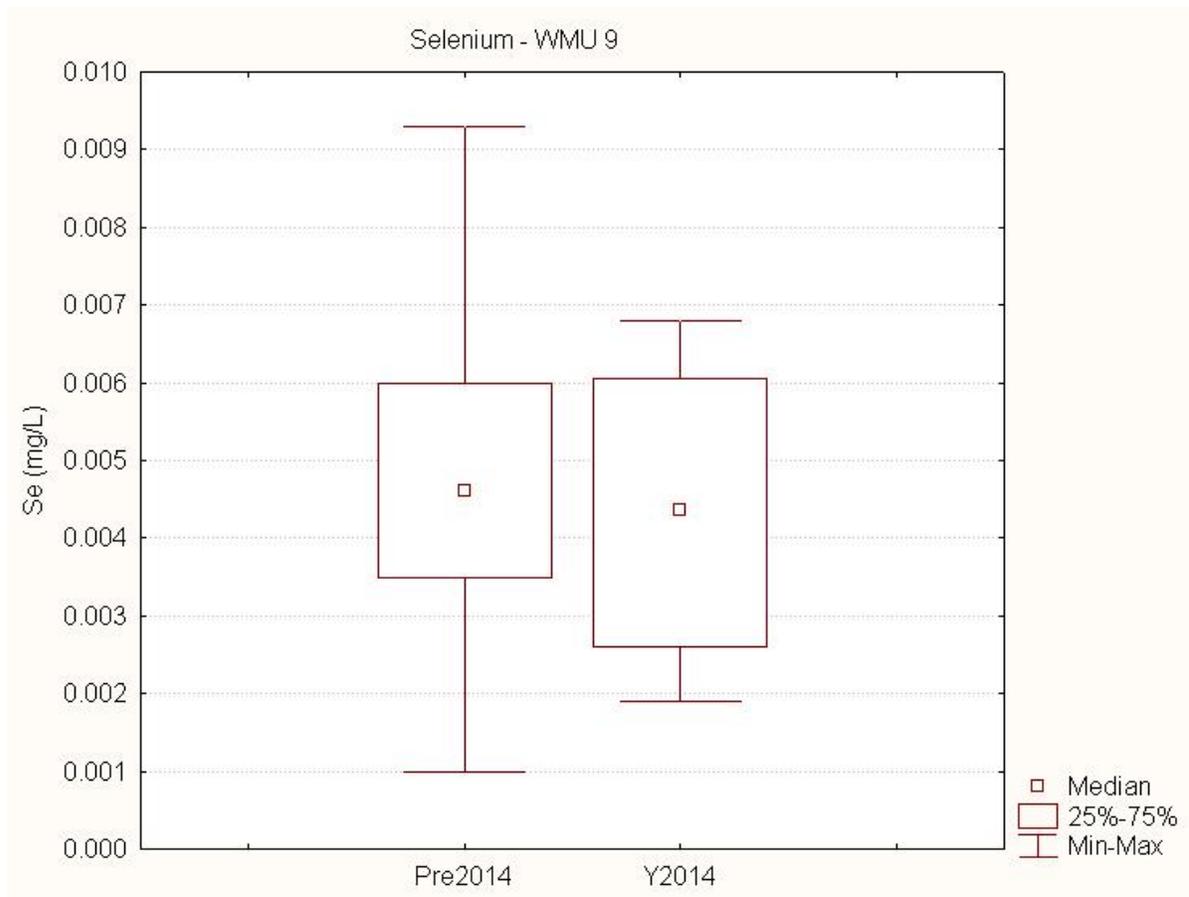
<b>Selenium</b>					
<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>		
	<u>Well 113</u>	<u>Well 124</u>	<u>Well 126</u>	<u>Well 127</u>	<u>Well 128</u>
<b>Test 2 Results</b>	<b>Well 113</b>	<b>Well 124</b>	Well 126	Well 127	Well 128
Pre-2014 Mean	<b>0.0041</b>	<b>0.0040</b>	0.0036	0.0057	0.0046
2014 Mean	<b>0.0037</b>	<b>0.0033</b>	0.0023	0.0064	0.0043
<b>1991-2014 Statistical Summary</b>					
Mean	<b>0.0040</b>	<b>0.0039</b>	0.0035	0.0057	0.0045
Median	<b>0.0038</b>	<b>0.0036</b>	0.0034	0.0060	0.0044
Standard Deviation	<b>0.0013</b>	<b>0.0016</b>	0.0013	0.0018	0.0016
Kurtosis	<b>1.260</b>	<b>5.208</b>	-0.339	-0.091	0.722
Skewness	<b>0.801</b>	<b>1.686</b>	0.534	-0.316	0.457
Minimum	<b>0.001</b>	<b>0.001</b>	0.001	0.001	0.001
Maximum	<b>0.008</b>	<b>0.010</b>	0.007	0.009	0.009
Count	<b>56</b>	<b>50</b>	42	72	60
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.					
N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics.					
All concentrations in mg/l.					

## WMU 9 TEST 3 SELENIUM

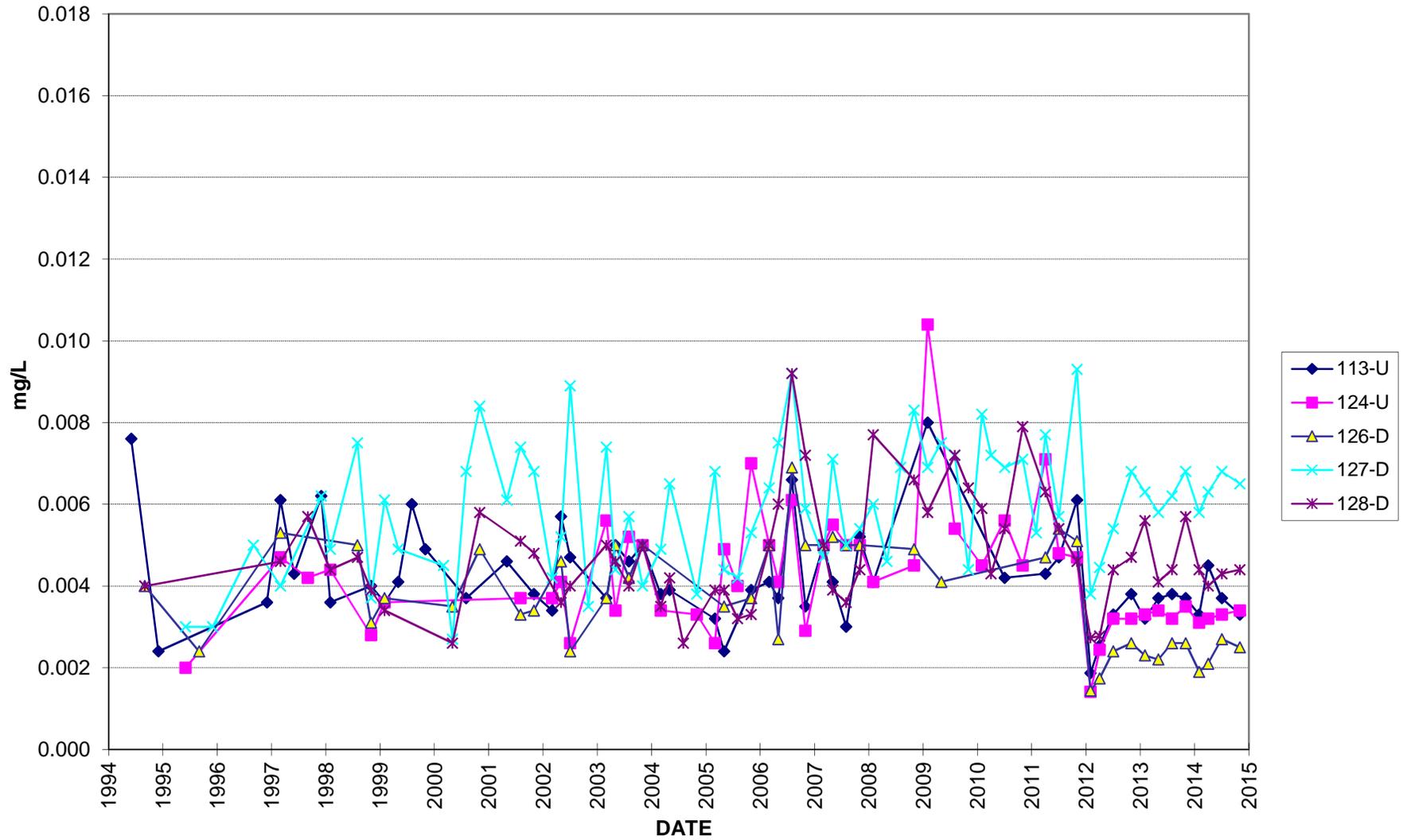
### *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Pre-2014	162	0.0046	14297.0	850.0	0.72	0.47
Year 2014	12	0.0044	928.0			

**Summary:** For downgradient wells, the median of Pre-2014 selenium concentration is not significantly different than the median of Year 2014 selenium concentration.



### Selenium in Groundwater (WMU 9)



# **POND 16S**

## **Waste Management Unit 10**

**Note:**

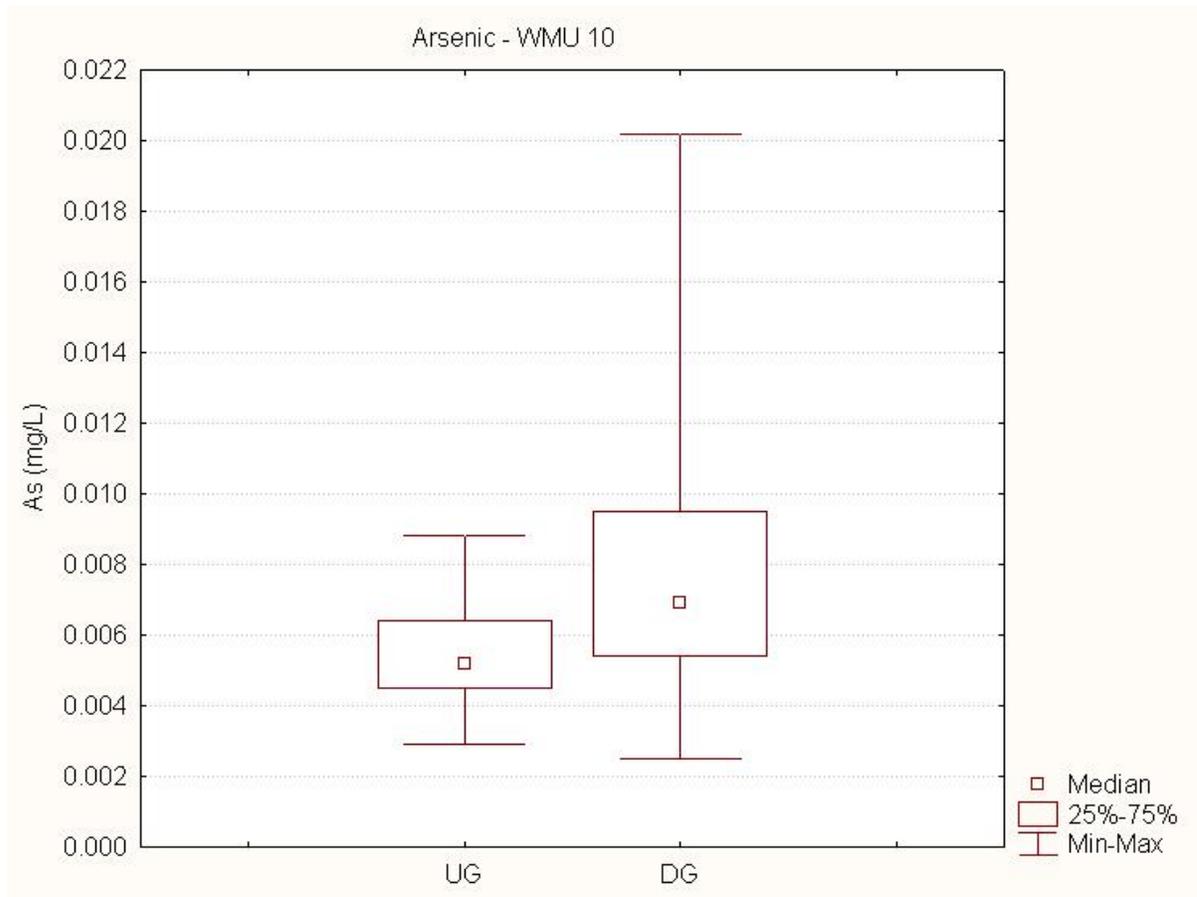
- 1. Time series plot scales are variable depending on the concentrations.**
- 2. Undetected values are not plotted on time series plots**

# WMU 10 TEST 1 ARSENIC

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	72	0.0052	7090.5	4462.5	-5.87	<0.0001
Downgradient	229	0.0069	38360.5			

**Summary:** The median arsenic concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR POND 16S (WMU 10)

**Arsenic**

Date	Upgradient Well	Downgradient Wells		
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
Jun-92	N.S.	U	U	0.0183
Sep-92	N.S.	U	U	0.0126
Dec-92	U	U	U	U
Mar-93	<b>0.0058</b>	0.0049	0.0088	0.0161
Jun-93	<b>0.0081</b>	0.0063	0.0090	0.0187
Sep-93	U	U	0.0102	0.0114
Dec-93	<b>0.0033</b>	0.0036	0.0069	0.0130
Mar-94	<b>0.0070</b>	0.0054	0.0102	0.0175
Jun-94	<b>0.0068</b>	0.0040	0.0061	0.0095
Sep-94	<b>0.0061</b>	U	0.0054	0.0129
Dec-94	U	U	U	0.0179
Mar-95	<b>0.0031</b>	0.0049	0.0085	0.0107
Jun-95	<b>0.0064</b>	0.0080	0.0053	0.0152
Sep-95	U	U	0.0040	0.0078
Dec-95	<b>0.0029</b>	0.0117	0.0050	0.0202
Mar-96	U	0.0084	0.0095	0.0065
Jun-96	<b>0.0088</b>	U	0.0065	0.0090
Sep-96	U	0.0058	0.0120	0.0140
Dec-96	U	U	U	U
Mar-97	<b>0.0050</b>	0.0025	0.0066	0.0130
Jun-97	U	U	U	0.0140
Sep-97	<b>0.0058</b>	0.0047	0.0075	0.0080
Dec-97	U	U	U	U
Feb-98	U	U	U	U
May-98	<b>0.0078</b>	0.0047	0.0090	0.0120
Aug-98	<b>0.0086</b>	0.0053	0.0088	0.0120
Nov-98	<b>0.0065</b>	0.0031	0.0085	0.0150
Feb-99	<b>0.0048</b>	0.0054	0.0087	0.0150
May-99	<b>0.0068</b>	U	U	0.0140
Aug-99	<b>0.0062</b>	0.0033	0.0063	0.0122
Nov-99	<b>0.0068</b>	0.0060	0.0089	0.0130
Mar-00	U	U	U	U
May-00	<b>0.0073</b>	0.0027	0.0057	0.0112
Aug-00	<b>0.0070</b>	U	U	U
Nov-00	<b>0.0087</b>	0.0067	0.0087	0.0143
Feb-01	<b>0.0064</b>	0.0052	0.0046	0.0134
May-01	<b>0.0045</b>	0.0047	0.0088	0.0097
Aug-01	<b>0.0055</b>	0.0046	0.0070	0.0112
Nov-01	<b>0.0062</b>	0.0034	0.0085	0.0146
Mar-02	<b>0.0052</b>	0.0050	0.0068	0.0139
May-02	<b>0.0049</b>	0.0034	U	0.0101
Jul-02	<b>0.0051</b>	U	0.0114	0.0130
Nov-02	<b>0.0045</b>	0.0045	0.0070	0.0107
Mar-03	U	U	U	U
May-03	<b>0.0045</b>	0.0042	0.0073	0.0097
Aug-03	<b>0.0064</b>	0.0055	U	0.0101
Nov-03	<b>0.0030</b>	0.0069	0.0051	0.0102
Mar-04	<b>0.0063</b>	0.0060	0.0071	0.0106

TEST 2  
STATISTICS FOR POND 16S (WMU 10)

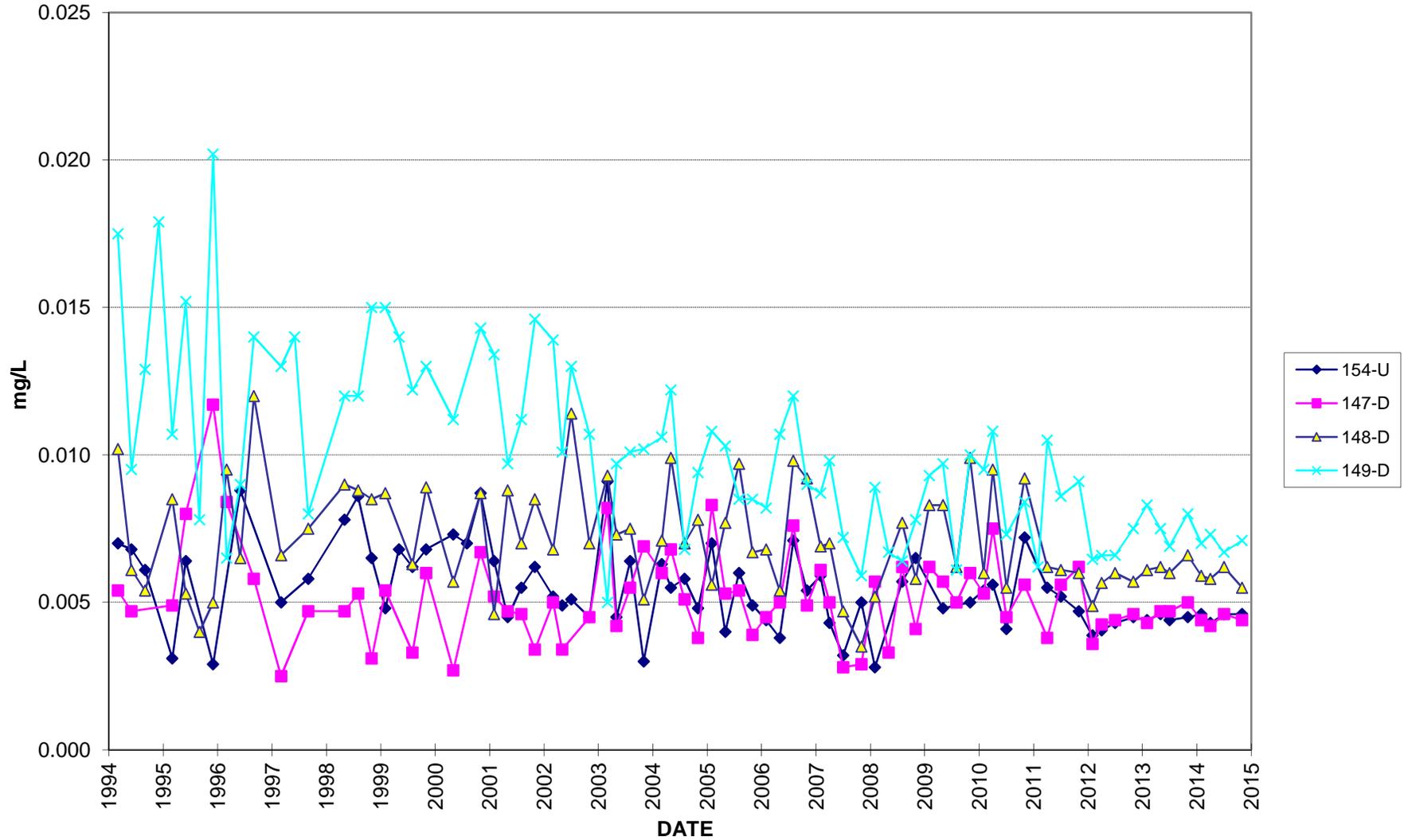
**Arsenic**

<u>Date</u>	<u>Upgradient Well</u>	<u>Downgradient Wells</u>		
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
May-04	0.0055	0.0068	0.0099	0.0122
Aug-04	0.0058	0.0051	0.0070	0.0068
Nov-04	0.0048	0.0038	0.0078	0.0094
Feb-05	0.0070	0.0083	0.0056	0.0108
May-05	0.0040	0.0053	0.0077	0.0103
Aug-05	0.0060	0.0054	0.0097	0.0085
Nov-05	0.0049	0.0039	0.0067	0.0085
Feb-06	0.0044	0.0045	0.0068	0.0082
May-06	0.0038	U	0.0054	0.0107
Aug-06	0.0071	0.0076	0.0098	0.0120
Nov-06	0.0054	0.0049	0.0092	0.0090
Feb-07	0.0059	0.0061	0.0069	0.0087
May-07	0.0043	0.0050	0.0070	0.0098
Aug-07	0.0032	0.0028	0.0047	0.0072
Nov-07	U	0.0029	0.0035	0.0059
Feb-08	U	U	U	U
May-08	U	0.0033	U	0.0067
Aug-08	0.0057	0.0062	0.0077	0.0064
Nov-08	0.0065	0.0041	0.0058	0.0078
Feb-09	U	0.0062	0.0083	0.0093
May-09	0.0048	0.0057	0.0083	0.0097
Aug-09	U	0.0050	0.0062	0.0061
Nov-09	0.0050	0.0060	0.0099	0.0100
Feb-10	0.0054	0.0053	0.0060	0.0095
May-10	0.0056	0.0075	0.0095	0.0108
Aug-10	0.0041	0.0045	0.0055	0.0073
Nov-10	0.0072	0.0056	0.0092	0.0084
Feb-11	0.0050	0.0050	U	0.0062
Apr-11	0.0055	0.0038	0.0062	0.0105
Jul-11	0.0052	0.0056	0.0061	0.0086
Nov-11	0.0047	0.0062	0.0060	0.0091
Feb-12	0.0039	0.0036	0.0049	0.0065
May-12	0.0041	0.0043	0.0057	0.0066
Aug-12	0.0043	0.0044	0.0060	0.0066
Oct-12	0.0045	0.0046	0.0057	0.0075
Feb-13	0.0044	0.0043	0.0061	0.0083
May-13	0.0046	0.0047	0.0062	0.0075
Jul-13	0.0044	0.0047	0.0060	0.0069
Nov-13	0.0045	0.0050	0.0066	0.0080
Feb-14	0.0046	0.0044	0.0059	0.0070
Apr-14	0.0043	0.0042	0.0058	0.0073
Jul-14	0.0046	0.0046	0.0062	0.0067
Nov-14	0.0046	0.0044	0.0055	0.0071

TEST 2  
STATISTICS FOR POND 16S (WMU 10)

<b>Arsenic</b>				
Date	Upgradient Well	Downgradient Wells		
<b>Test 2 Results</b>	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
Pre-2014 Mean	<b>0.0055</b>	0.0051	0.0073	0.0107
2014 Mean	<b>0.0045</b>	0.0044	0.0059	0.0070
<b>1991-2014 Statistical Summary</b>				
Mean	<b>0.005</b>	0.005	0.007	0.011
Median	<b>0.005</b>	0.005	0.007	0.010
Standard Deviation	<b>0.001</b>	0.002	0.002	0.003
Kurtosis	<b>-0.078</b>	4.305	-0.361	0.224
Skewness	<b>0.473</b>	1.416	0.448	0.819
Minimum	<b>0.003</b>	0.003	0.004	0.006
Maximum	<b>0.009</b>	0.012	0.012	0.020
Count	<b>72</b>	72	74	83
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.            N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics.            All concentrations in mg/l.</p>				

### Arsenic in Groundwater (WMU 10)

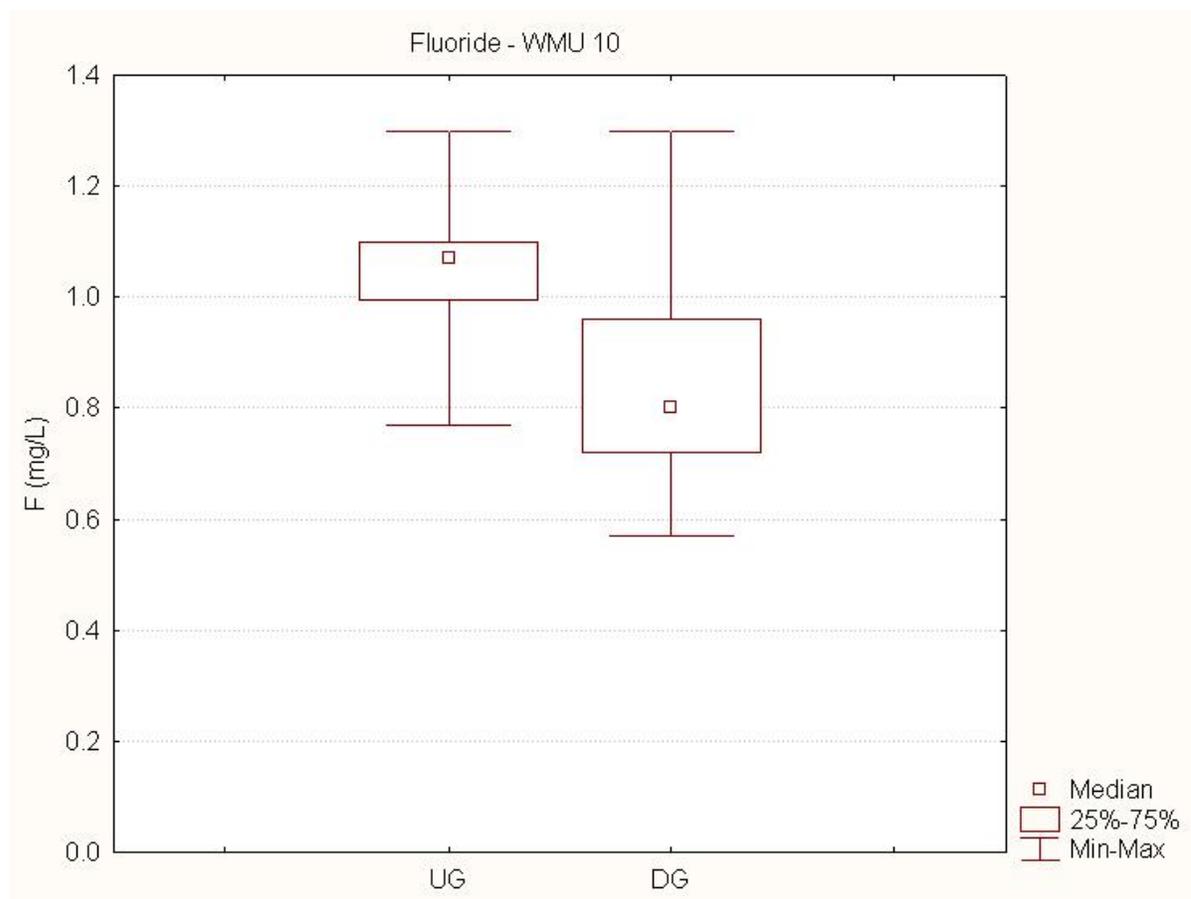


## WMU 10 TEST 1 FLUORIDE

### *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	88	1.07	23956.5	3279.5	10.10	<0.0001
Downgradient	265	0.800	38524.5			

**Summary:** The median fluoride concentration of downgradient (DG) wells is statistically lower than the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR POND 16S (WMU 10)

**Fluoride**

Date	Upgradient Well	Downgradient Wells		
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
Jun-92	N.S.	0.778	0.731	1.02
Sep-92	N.S.	0.73	1	1.2
Dec-92	1.2	0.8	0.8	1.1
Mar-93	1.2	0.8	0.8	1.1
Jun-93	1.1	0.8	0.8	1.1
Sep-93	0.9	0.6	0.6	0.9
Dec-93	1.2	0.8	0.8	0.9
Mar-94	1.3	0.8	0.9	1
Jun-94	1.1	0.7	0.7	1
Sep-94	1.1	0.8	0.8	1.1
Dec-94	1.08	0.92	0.8	1.1
Mar-95	1.15	0.806	0.786	0.892
Jun-95	1.19	0.756	0.734	1.1
Sep-95	1.19	0.822	0.812	1.04
Dec-95	0.91	0.606	0.622	0.802
Mar-96	0.936	0.774	0.722	1.25
Jun-96	1.11	0.792	0.87	1.07
Sep-96	1.2	U	U	1.1
Dec-96	1.06	0.71	0.72	0.95
Mar-97	1.04	0.68	0.76	0.9
Jun-97	1.03	0.68	0.7	0.92
Sep-97	0.97	0.7	0.72	0.93
Dec-97	1.01	0.64	0.68	0.74
Feb-98	1.08	0.69	0.73	0.97
May-98	1.08	0.67	0.68	0.92
Aug-98	1.05	0.69	0.68	0.92
Nov-98	1.21	0.73	0.75	1.01
Feb-99	1.04	0.71	0.75	1.01
May-99	1.14	0.68	0.71	0.93
Aug-99	1.10	0.73	0.74	1.00
Nov-99	U	U	U	U
Mar-00	1.10	0.75	0.79	1.00
May-00	1.10	U	U	U
Aug-00	1.10	0.77	0.64	1.00
Nov-00	1.10	0.73	0.76	1.00
Feb-01	0.99	0.64	0.68	0.90
May-01	1.00	0.8	0.6	0.97
Aug-01	1.00	0.64	0.92	0.72
Nov-01	1.10	0.69	0.73	0.94
Mar-02	1.10	0.71	0.76	1.10
May-02	1.10	0.72	0.74	1.00
Jul-02	1.10	0.73	0.79	1.00
Nov-02	1.10	0.94	0.97	1.00
Mar-03	1.00	0.73	0.73	0.98
May-03	1.00	0.71	0.76	1.00
Aug-03	1.00	0.77	0.88	1.20
Nov-03	1.00	0.73	0.77	1.00
Mar-04	1.00	0.74	0.76	1.00

TEST 2  
STATISTICS FOR POND 16S (WMU 10)

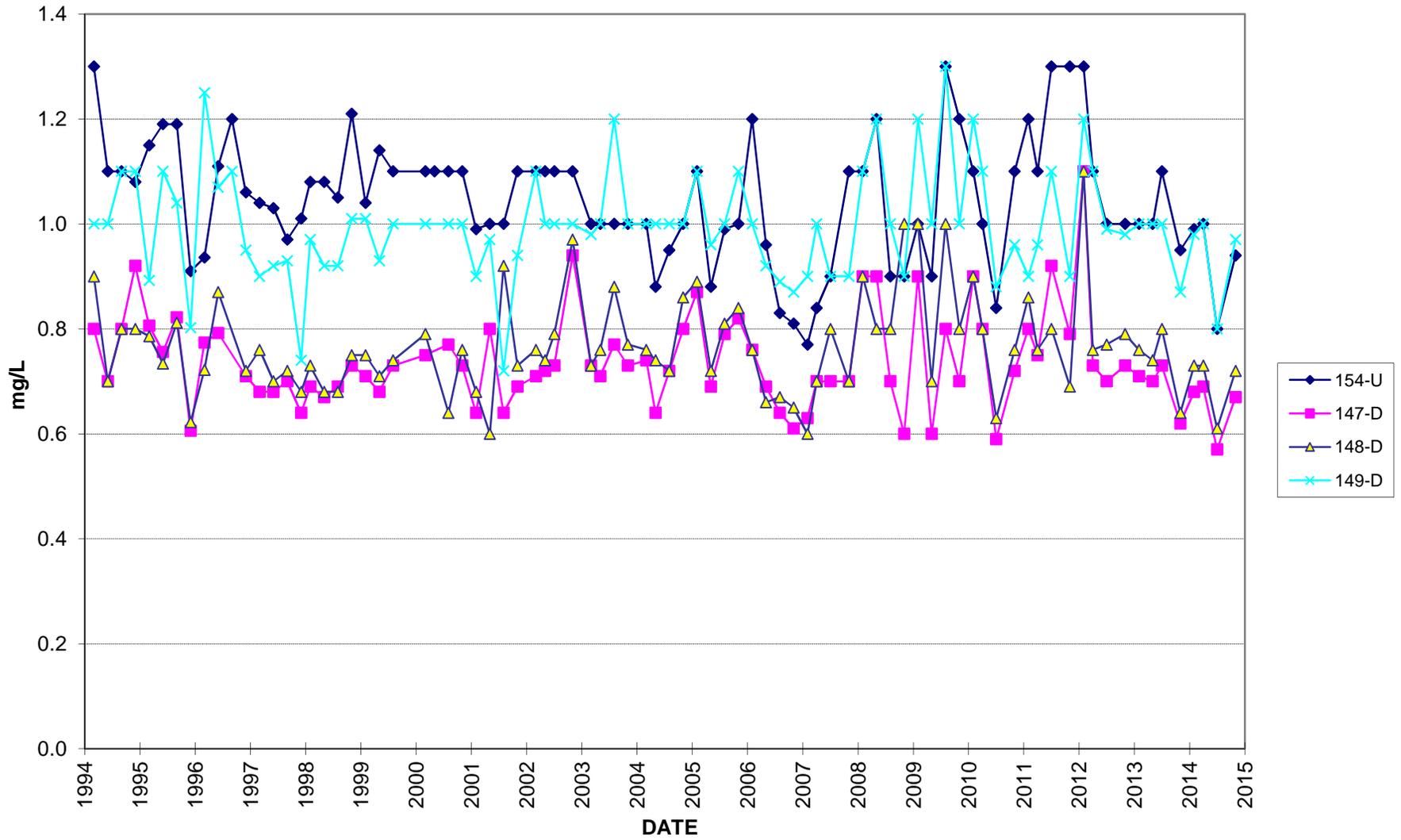
**Fluoride**

Date	Upgradient Well	Downgradient Wells		
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
May-04	<b>0.88</b>	0.64	0.74	1.00
Aug-04	<b>0.95</b>	0.72	0.72	1.00
Nov-04	<b>1.00</b>	0.8	0.86	1.00
Feb-05	<b>1.10</b>	0.87	0.89	1.10
May-05	<b>0.88</b>	0.69	0.72	0.96
Aug-05	<b>0.99</b>	0.79	0.81	1.00
Nov-05	<b>1.00</b>	0.82	0.84	1.10
Feb-06	<b>1.2</b>	0.76	0.76	1
May-06	<b>0.96</b>	0.69	0.66	0.92
Aug-06	<b>0.83</b>	0.64	0.67	0.89
Nov-06	<b>1.2</b>	0.61	0.65	0.87
Feb-07	<b>0.77</b>	0.63	0.6	0.9
May-07	<b>0.84</b>	0.7	0.7	1
Aug-07	<b>0.9</b>	0.7	0.8	0.9
Nov-07	<b>1.1</b>	0.7	0.7	0.9
Feb-08	<b>1.1</b>	0.9	0.9	1.1
May-08	<b>1.2</b>	0.9	0.8	1.2
Aug-08	<b>0.9</b>	0.7	0.8	1
Nov-08	<b>0.9</b>	0.6	1	0.9
Feb-09	<b>1</b>	0.9	1	1.2
May-09	<b>0.9</b>	0.6	0.7	1
Aug-09	<b>1.3</b>	0.8	1	1.3
Nov-09	<b>1.2</b>	0.7	0.8	1
Feb-10	<b>1.1</b>	0.9	0.9	1.2
May-10	<b>1</b>	0.8	0.8	1.1
Aug-10	<b>0.84</b>	0.59	0.63	0.88
Nov-10	<b>1.1</b>	0.72	0.76	0.96
Feb-11	<b>1.2</b>	0.8	0.86	0.9
Apr-11	<b>1.1</b>	0.75	0.76	0.96
Jul-11	<b>1.3</b>	0.92	0.8	1.1
Nov-11	<b>1.3</b>	0.79	0.69	0.9
Feb-12	<b>1.3</b>	1.1	1.1	1.2
May-12	<b>1.1</b>	0.73	0.76	1.1
Aug-12	<b>1</b>	0.7	0.77	0.99
Oct-12	<b>1</b>	0.73	0.79	0.98
Feb-13	<b>1</b>	0.71	0.76	1
May-13	<b>1</b>	0.7	0.74	1
Jul-13	<b>1.1</b>	0.73	0.8	1
Nov-13	<b>0.95</b>	0.62	0.64	0.87
Feb-14	<b>0.99</b>	0.68	0.73	0.98
Apr-14	<b>1.00</b>	0.69	0.73	1.00
Jul-14	<b>0.80</b>	0.57	0.61	0.80
Nov-14	<b>0.94</b>	0.67	0.72	0.97

TEST 2  
STATISTICS FOR POND 16S (WMU 10)

<b>Fluoride</b>				
<u>Date</u>	<b>Upgradient Well</b>	<b>Downgradient Wells</b>		
<b>Test 2 Results</b>	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
Pre-2014 Mean	<b>1.0602</b>	0.7422	0.7721	1.0019
2014 Mean	<b>0.9325</b>	0.6525	0.6975	0.9375
<b>1991-2014 Statistical Summary</b>				
Mean	<b>1.054</b>	0.738	0.769	0.999
Median	<b>1.070</b>	0.730	0.760	1.000
Standard Deviation	<b>0.119</b>	0.090	0.098	0.106
Kurtosis	<b>-0.217</b>	2.186	1.301	0.696
Skewness	<b>0.010</b>	0.982	0.912	0.299
Minimum	<b>0.770</b>	0.570	0.600	0.720
Maximum	<b>1.300</b>	1.100	1.100	1.300
Count	<b>88</b>	88	88	89
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.				
N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics.				
All concentrations in mg/l.				

### Fluoride in Groundwater (WMU 10)

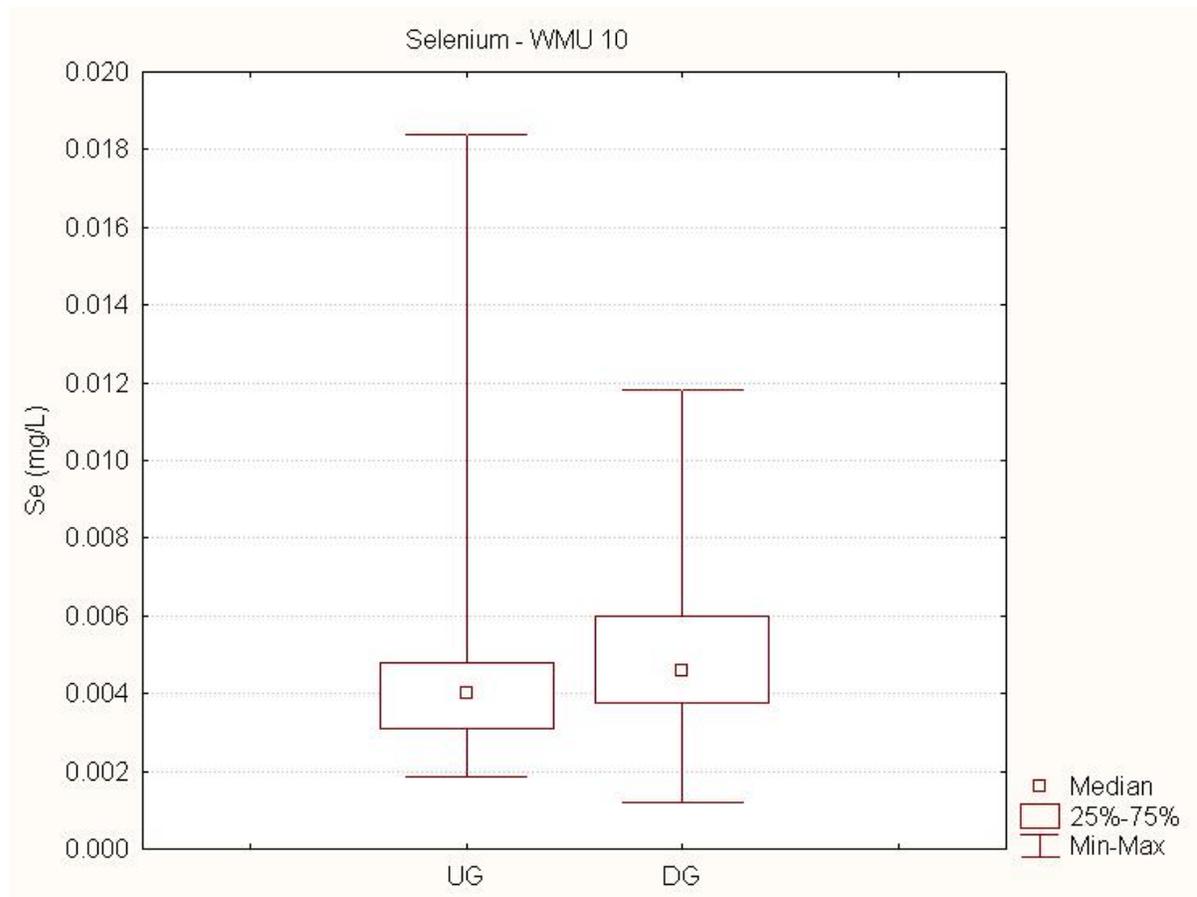


# WMU 10 TEST 1 SELENIUM

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	41	0.0040	3659.5	2798.5	-2.05	0.04
Downgradient	172	0.0046	19131.5			

**Summary:** The median selenium concentration of downgradient (DG) wells is significantly higher than the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR POND 16S (WMU 10)

**Selenium**

<u>Date</u>	<u>Upgradient Well</u>	<u>Downgradient Wells</u>		
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
Jun-92	N.S.	U	0.0083	U
Sep-92	N.S.	U	U	U
Dec-92	U	U	U	U
Mar-93	<b>0.0023</b>	0.0031	0.0050	U
Jun-93	U	0.0027	0.0015	U
Sep-93	U	0.0051	0.0039	U
Dec-93	U	U	U	U
Mar-94	U	U	U	U
Jun-94	U	0.0050	0.0056	U
Sep-94	U	U	U	U
Dec-94	U	0.0035	0.0029	U
Mar-95	U	0.0032	0.0024	U
Jun-95	U	U	U	U
Sep-95	<b>0.0184</b>	0.0068	0.0045	U
Dec-95	U	0.0027	U	U
Mar-96	U	U	U	U
Jun-96	U	U	U	U
Sep-96	U	0.0060	0.0040	0.0030
Dec-96	U	0.0063	0.0038	0.0035
Mar-97	<b>0.0042</b>	0.0047	0.0073	U
Jun-97	<b>0.0046</b>	0.0049	U	U
Sep-97	U	0.0073	0.0048	0.0059
Dec-97	<b>0.0047</b>	0.0072	0.0047	0.0037
Feb-98	<b>0.0032</b>	0.0044	0.0043	0.0030
May-98	U	U	U	U
Aug-98	<b>0.0067</b>	0.0060	0.0066	U
Nov-98	U	0.0058	U	0.0036
Feb-99	U	0.0051	0.0050	U
May-99	U	0.0048	0.0035	U
Aug-99	U	U	U	U
Nov-99	U	0.0057	U	U
Mar-00	U	0.0053	0.0061	0.0032
May-00	U	0.0038	0.0066	U
Aug-00	U	0.0060	0.0036	U
Nov-00	U	0.0057	0.0070	0.0045
Feb-01	U	0.0065	0.0049	U
May-01	U	0.0053	0.0065	U
Aug-01	U	U	U	U
Nov-01	U	0.0068	U	0.0045
Mar-02	U	0.0058	0.0046	U
May-02	U	0.0042	0.0038	0.0024
Jul-02	U	0.0060	0.0068	U
Nov-02	U	0.0039	0.0040	U
Mar-03	U	0.0050	0.0050	U
May-03	<b>0.0036</b>	U	U	0.0043
Aug-03	U	0.0066	0.0044	0.0049
Nov-03	U	0.0071	U	U
Mar-04	<b>0.0034</b>	0.0036	0.0034	0.0034

TEST 2  
STATISTICS FOR POND 16S (WMU 10)

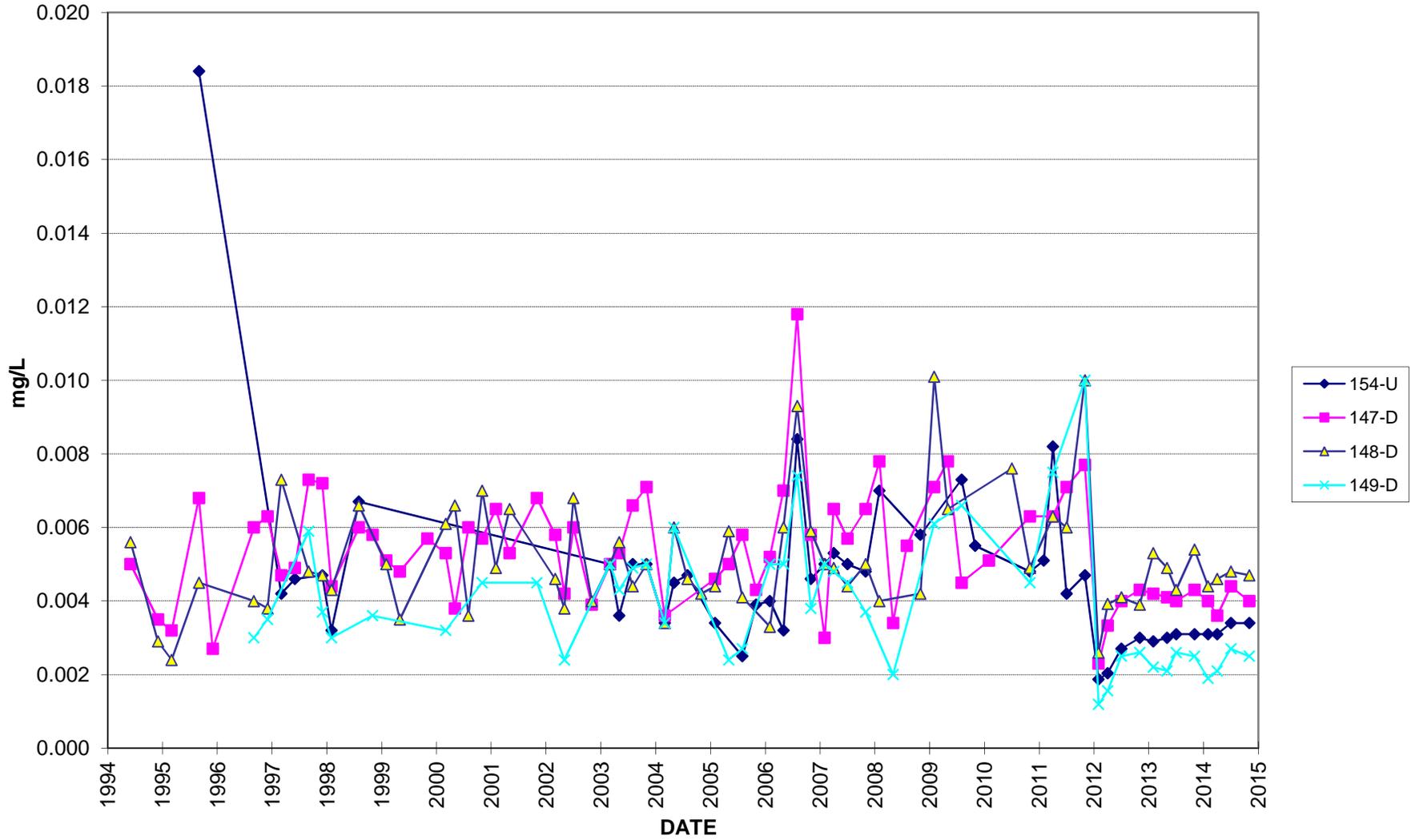
**Selenium**

<u>Date</u>	<u>Upgradient Well</u>	<u>Downgradient Wells</u>		
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
May-04	<b>0.0045</b>	U	0.0060	0.0060
Aug-04	<b>0.0047</b>	U	0.0046	U
Nov-04	U	U	0.0042	U
Feb-05	<b>0.0034</b>	0.0046	0.0044	U
May-05	U	0.0050	0.0059	0.0024
Aug-05	<b>0.0025</b>	0.0058	0.0041	0.0027
Nov-05	<b>0.0039</b>	0.0043	U	U
Feb-06	<b>0.0040</b>	0.0052	0.0033	U
May-06	<b>0.0032</b>	0.0070	0.0060	U
Aug-06	<b>0.0084</b>	0.0118	0.0093	0.0074
Nov-06	<b>0.0046</b>	0.0058	0.0059	0.0038
Feb-07	U	0.0030	U	U
May-07	<b>0.0053</b>	0.0065	0.0049	0.0048
Aug-07	U	0.0057	0.0044	0.0045
Nov-07	<b>0.0048</b>	0.0065	U	0.0037
Feb-08	<b>0.0070</b>	0.0078	0.0040	U
May-08	U	0.0034	U	0.0020
Aug-08	U	0.0055	U	U
Nov-08	<b>0.0058</b>	U	0.0042	U
Feb-09	U	0.0071	0.0101	0.0061
May-09	U	0.0078	0.0065	U
Aug-09	<b>0.0073</b>	0.0045	U	0.0066
Nov-09	<b>0.0055</b>	U	U	U
Feb-10	U	0.0051	U	U
May-10	U	U	U	U
Aug-10	U	U	0.0076	U
Nov-10	<b>0.0048</b>	0.0063	0.0049	0.0045
Feb-11	<b>0.0051</b>	U	U	U
Apr-11	<b>0.0082</b>	0.0063	0.0063	0.0075
Jul-11	<b>0.0042</b>	0.0071	0.0060	U
Nov-11	<b>0.0047</b>	0.0077	0.0100	0.0100
Feb-12	<b>0.0019</b>	0.0023	0.0026	0.0012
May-12	<b>0.0020</b>	0.0033	0.0039	0.0016
Aug-12	<b>0.0027</b>	0.0040	0.0041	0.0025
Oct-12	<b>0.0030</b>	0.0043	0.0039	0.0026
Feb-13	<b>0.0029</b>	0.0042	0.0053	0.0022
May-13	<b>0.0030</b>	0.0041	0.0049	0.0021
Jul-13	<b>0.0031</b>	0.0040	0.0043	0.0026
Nov-13	<b>0.0031</b>	0.0043	0.0054	0.0025
Feb-14	<i>0.0031</i>	<i>0.0040</i>	<i>0.0044</i>	<i>0.0019</i>
Apr-14	<i>0.0031</i>	<i>0.0036</i>	<i>0.0046</i>	<i>0.0021</i>
Jul-14	<i>0.0034</i>	<i>0.0044</i>	<i>0.0048</i>	<i>0.0027</i>
Nov-14	<i>0.0034</i>	<i>0.0040</i>	<i>0.0047</i>	<i>0.0025</i>

TEST 2  
STATISTICS FOR POND 16S (WMU 10)

<b>Selenium</b>				
Date	Upgradient Well	Downgradient Wells		
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
<b>Test 2 Results</b>				
	<u>Well 154</u>	<u>Well 147</u>	<u>Well 148</u>	<u>Well 149</u>
Pre-2014 Mean	<b>0.0047</b>	0.0053	0.0051	0.0040
2014 Mean	<b>0.0033</b>	0.0040	0.0046	0.0023
<b>1991-2014 Statistical Summary</b>				
Mean	<b>0.005</b>	0.005	0.005	0.004
Median	<b>0.004</b>	0.005	0.005	0.003
Standard Deviation	<b>0.003</b>	0.002	0.002	0.002
Kurtosis	<b>16.689</b>	2.793	1.668	1.881
Skewness	<b>3.536</b>	0.929	1.023	1.310
Minimum	<b>0.002</b>	0.002	0.002	0.001
Maximum	<b>0.018</b>	0.012	0.010	0.010
Count	<b>41</b>	70	63	39
U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.				
N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics.				
All concentrations in mg/l.				

### Selenium in Groundwater (WMU 10)



# **POND 17**

## **Waste Management Unit 14**

**Note:**

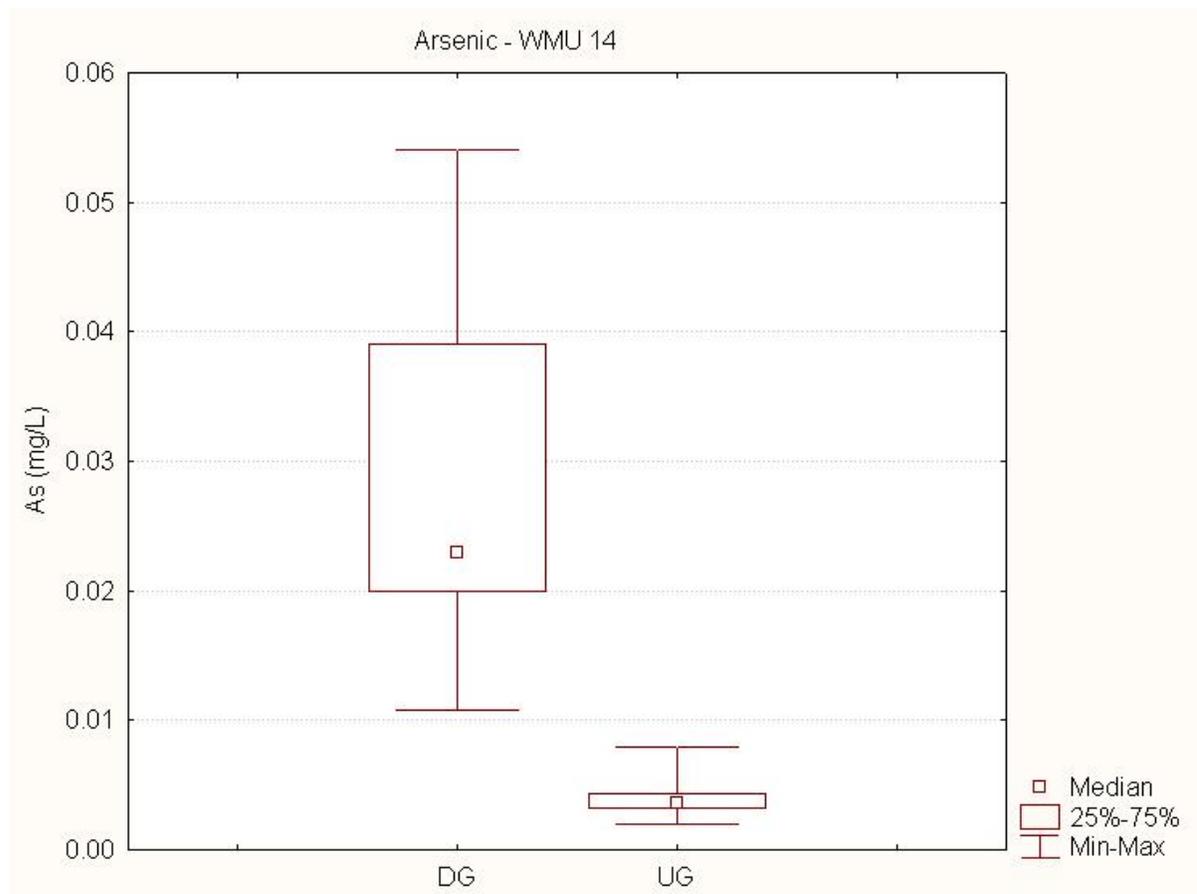
- 1. Time series plot scales are variable depending on the concentrations.**
- 2. Undetected values are not plotted on time series plots**

## WMU 14 TEST 1 ARSENIC

### *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	55	0.0039	1540.0	0.00	11.41	<0.0001
Downgradient	210	0.023	33705.0			

**Summary:** The median arsenic concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR POND 17 (WMU 14)

**Arsenic**

<u>Date</u>	<b>Upgradient Well</b>	<b>Downgradient Wells</b>		
	<b><u>Well 173</u></b>	<b><u>Well 171</u></b>	<b><u>Well 172</u></b>	<b><u>Well 180</u></b>
Mar-97	N.S.	0.017	N.S.	N.S.
Jun-97	N.S.	0.025	N.S.	N.S.
Sep-97	N.S.	0.017	0.019	0.035
Dec-97	N.S.	U	0.022	0.035
Feb-98	N.S.	0.021	0.024	0.041
May-98	N.S.	0.021	0.023	0.043
Aug-98	N.S.	0.021	0.026	0.054
Nov-98	<b>0.003</b>	0.020	0.026	0.052
Feb-99	<b>0.0049</b>	0.018	0.026	0.050
May-99	U	0.020	0.024	0.052
Aug-99	<b>0.005</b>	0.019	0.024	0.0486
Nov-99	<b>0.0064</b>	0.0198	0.0247	0.0426
Mar-00	U	0.0189	0.0236	0.0462
May-00	<b>0.0028</b>	0.0181	0.0236	0.0497
Aug-00	<b>0.004</b>	0.0185	0.0229	0.0491
Nov-00	<b>0.006</b>	0.0234	0.0291	0.0477
Feb-01	<b>0.0066</b>	0.0202	0.0247	0.0523
May-01	U	0.0215	0.0241	0.0436
Aug-01	<b>0.0034</b>	0.0182	0.0217	0.042
Nov-01	<b>0.0038</b>	0.02	0.0228	0.0449
Mar-02	<b>0.0042</b>	0.0191	0.0219	0.0452
May-02	<b>0.0033</b>	0.0179	0.0205	0.0426
Jul-02	<b>0.002</b>	0.0188	0.0238	0.0434
Nov-02	<b>0.0035</b>	0.0174	0.0222	0.0421
Mar-03	U	U	0.0247	0.0462
May-03	<b>0.0034</b>	0.0206	0.0232	0.0433
Aug-03	<b>0.0044</b>	0.021	0.0249	0.0452
Nov-03	<b>0.0025</b>	0.0175	0.0205	0.0407
Mar-04	<b>0.0039</b>	0.0209	0.0268	0.0465
May-04	<b>0.0044</b>	0.0211	0.0261	0.0457
Aug-04	U	0.0202	0.0233	0.0417
Nov-04	<b>0.0029</b>	0.019	0.0229	0.0426
Mar-05	<b>0.005</b>	0.021	0.025	0.0455
May-05	<b>0.0033</b>	0.0205	0.0242	0.0461
Aug-05	<b>0.004</b>	0.0222	0.0261	0.0447
Nov-05	<b>0.0044</b>	0.0185	0.0206	0.0436
Feb-06	<b>0.0026</b>	0.0178	0.0229	0.0412
May-06	<b>0.004</b>	0.0186	0.0228	0.0484
Aug-06	<b>0.008</b>	0.0221	0.0269	0.0469
Nov-06	<b>0.0047</b>	0.019	0.0226	0.0434
Feb-07	<b>0.0036</b>	0.0183	0.0206	0.0434
May-07	<b>0.0039</b>	0.0193	0.0224	0.0433
Aug-07	U	0.0186	0.0213	0.0418
Nov-07	U	0.0108	0.0185	0.0391
Feb-08	U	0.0174	0.0232	0.0363
May-08	<b>0.0028</b>	0.0267	0.0323	0.0453

TEST 2  
STATISTICS FOR POND 17 (WMU 14)

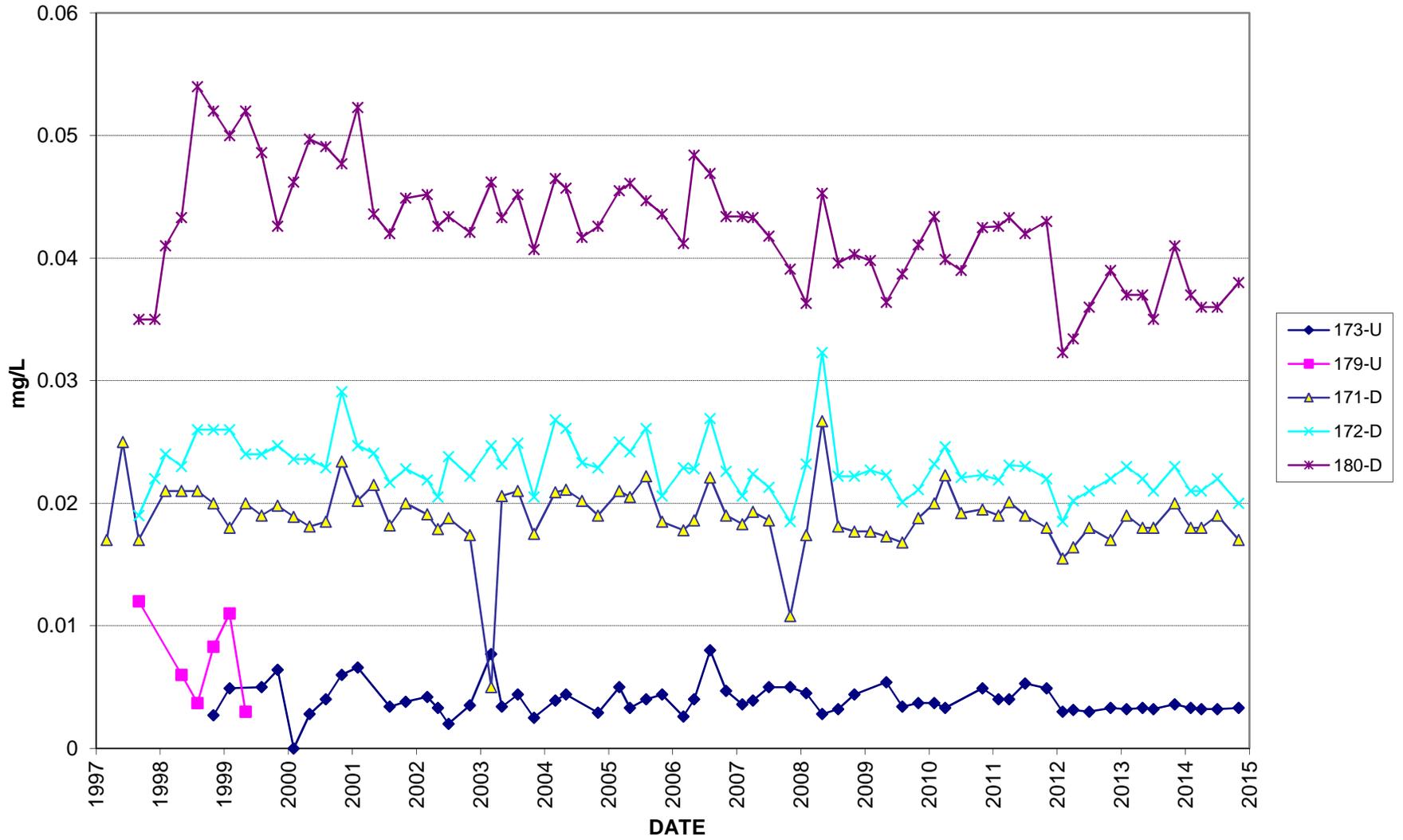
**Arsenic**

<u>Date</u>	<b>Upgradient Well</b>	<b>Downgradient Wells</b>		
	<b><u>Well 173</u></b>	<b><u>Well 171</u></b>	<b><u>Well 172</u></b>	<b><u>Well 180</u></b>
Aug-08	<b>0.0032</b>	0.0181	0.0222	0.0396
Nov-08	<b>0.0044</b>	0.0177	0.0222	0.0403
Feb-09	<b>U</b>	0.0177	0.0227	0.0398
May-09	<b>0.0054</b>	0.0173	0.0223	0.0364
Aug-09	<b>0.0034</b>	0.0168	0.0201	0.0387
Nov-09	<b>0.0037</b>	0.0188	0.0211	0.0411
Feb-10	<b>0.0037</b>	0.02	0.0232	0.0434
Apr-10	<b>0.0033</b>	0.0223	0.0246	0.0399
Jul-10	<b>U</b>	0.0192	0.0221	0.039
Nov-10	<b>0.0049</b>	0.0195	0.0223	0.0425
Feb-11	<b>0.004</b>	0.019	0.0219	0.0426
Apr-11	<b>0.004</b>	0.0201	0.0231	0.0433
Jul-11	<b>0.0053</b>	0.019	0.023	0.042
Nov-11	<b>0.0049</b>	0.018	0.022	0.043
Feb-12	<b>0.003</b>	0.0155	0.0185	0.0323
May-12	<b>0.00313</b>	0.0164	0.0202	0.0334
Aug-12	<b>0.003</b>	0.018	0.021	0.036
Oct-12	<b>0.0033</b>	0.017	0.022	0.039
Feb-13	<b>0.0032</b>	0.019	0.023	0.037
May-13	<b>0.0033</b>	0.018	0.022	0.037
Jul-13	<b>0.0032</b>	0.018	0.021	0.035
Nov-13	<b>0.0036</b>	0.020	0.023	0.041
Feb-14	<i>0.0033</i>	<i>0.018</i>	<i>0.021</i>	<i>0.037</i>
Apr-14	<i>0.0032</i>	<i>0.018</i>	<i>0.021</i>	<i>0.036</i>
Jul-14	<i>0.0032</i>	<i>0.019</i>	<i>0.022</i>	<i>0.036</i>
Nov-14	<i>0.0033</i>	<i>0.017</i>	<i>0.020</i>	<i>0.038</i>

TEST 2  
STATISTICS FOR POND 17 (WMU 14)

<b>Arsenic</b>				
<u>Date</u>	<b>Upgradient Well</b>	<b>Downgradient Wells</b>		
<b>Test 2 Results</b>	<u>Well 173</u>	<u>Well 171</u>	<u>Well 172</u>	<u>Well 180</u>
	<b>Well 173</b>	Well 171	Well 172	Well 180
Pre-2014 Mean	<b>0.0040</b>	0.0192	0.0231	0.0428
2014 Mean	<b>0.0033</b>	0.0180	0.0210	0.0368
<b>1991-2014 Statistical Summary</b>				
Mean	<b>0.004</b>	0.019	0.023	0.042
Median	<b>0.004</b>	0.019	0.023	0.043
Standard Deviation	<b>0.001</b>	0.002	0.002	0.005
Kurtosis	<b>2.714</b>	4.185	3.215	-0.173
Skewness	<b>1.408</b>	0.184	1.103	0.170
Minimum	<b>0.002</b>	0.011	0.019	0.032
Maximum	<b>0.008</b>	0.027	0.032	0.054
Count	<b>55</b>	70	70	70
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.            N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics.            All concentrations in mg/l.</p>				

### Arsenic in Groundwater (WMU 14)

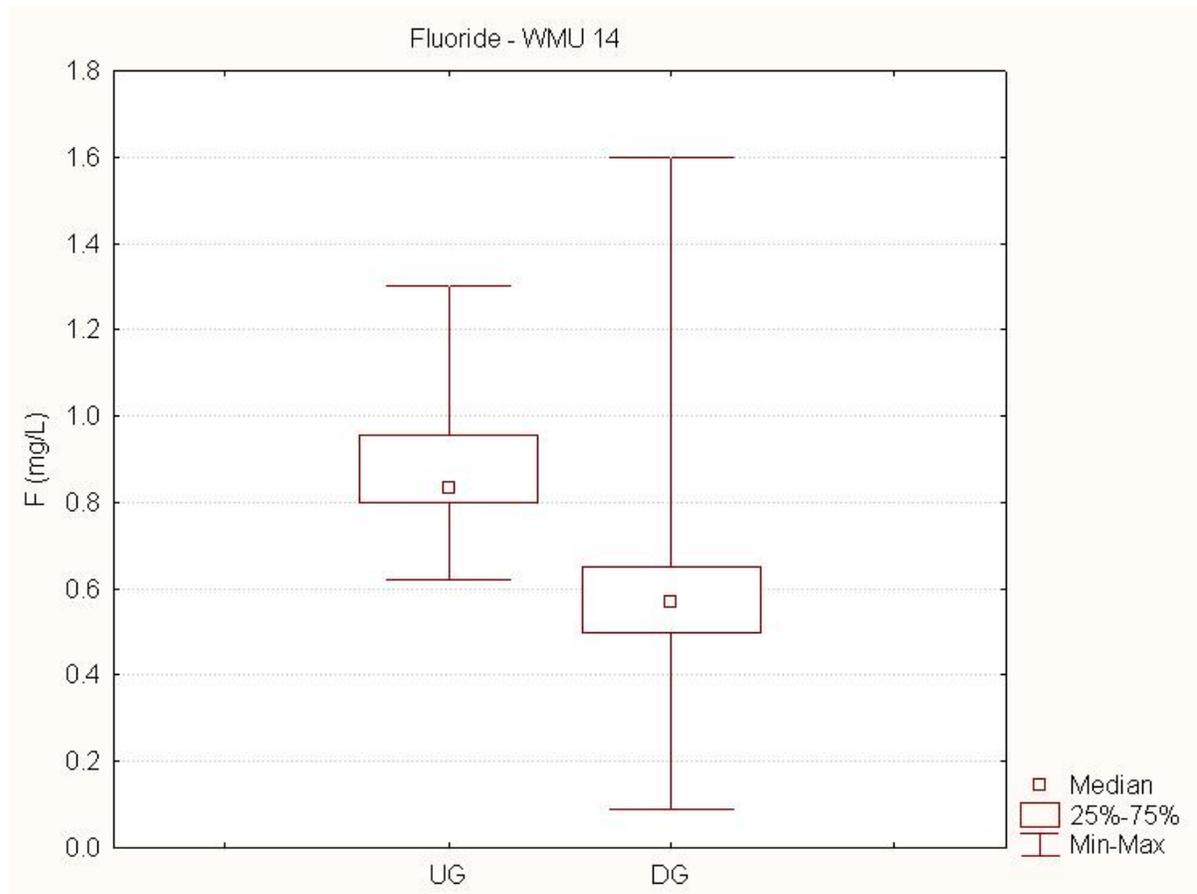


# WMU 14 TEST 1 FLUORIDE

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	64	0.835	14435.0	957.0	10.35	<0.0001
Downgradient	208	0.570	22693.0			

**Summary:** The median fluoride concentration of downgradient (DG) wells is statistically lower than the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR POND 17 (WMU 14)

**Fluoride**

<u>Date</u>	<b>Upgradient Well</b>	<b>Downgradient Wells</b>		
	<u>Well 173</u>	<u>Well 171</u>	<u>Well 172</u>	<u>Well 180</u>
Mar-97	N.S.	0.66	N.S.	N.S.
Jun-97	N.S.	0.59	N.S.	N.S.
Sep-97	N.S.	0.58	0.33	0.76
Dec-97	N.S.	0.55	0.32	0.71
Feb-98	N.S.	0.61	0.37	0.68
May-98	N.S.	0.56	0.37	0.57
Aug-98	N.S.	0.59	0.39	0.37
Nov-98	<b>0.95</b>	0.62	0.40	0.70
Feb-99	<b>1.04</b>	0.63	0.40	0.43
May-99	<b>1.03</b>	0.61	0.40	0.47
Aug-99	<b>0.83</b>	0.65	0.46	0.44
Nov-99	<b>U</b>	<b>U</b>	<b>U</b>	<b>U</b>
Mar-00	<b>0.89</b>	0.67	0.42	0.55
May-00	<b>0.96</b>	0.69	0.3	0.09
Aug-00	<b>0.85</b>	0.71	0.5	0.58
Nov-00	<b>0.86</b>	0.65	0.46	0.71
Feb-01	<b>0.76</b>	0.61	0.38	0.53
May-01	<b>0.8</b>	0.76	0.38	0.48
Aug-01	<b>0.7</b>	0.63	0.4	0.47
Nov-01	<b>0.75</b>	0.6	0.42	0.51
Mar-02	<b>0.79</b>	0.64	0.41	0.56
May-02	<b>0.81</b>	0.64	0.42	0.53
Jul-02	<b>0.8</b>	0.66	0.48	0.51
Nov-02	<b>1.1</b>	0.68	0.52	0.83
Mar-03	<b>0.83</b>	0.62	0.45	0.67
May-03	<b>0.83</b>	0.63	0.42	0.55
Aug-03	<b>0.96</b>	0.76	0.48	0.51
Nov-03	<b>0.81</b>	0.67	0.5	0.56
Mar-04	<b>0.83</b>	0.64	0.52	0.55
May-04	<b>0.62</b>	0.57	0.4	0.51
Aug-04	<b>0.86</b>	0.55	0.44	0.49
Nov-04	<b>0.98</b>	0.73	0.52	0.77
Mar-05	<b>1.1</b>	0.77	0.58	0.64
May-05	<b>0.88</b>	0.62	0.52	0.58
Aug-05	<b>0.75</b>	0.78	0.69	0.56
Nov-05	<b>0.77</b>	0.67	0.5	0.94
Feb-06	<b>1.1</b>	0.65	0.47	0.71
May-06	<b>0.81</b>	0.71	0.76	0.98
Aug-06	<b>0.69</b>	0.62	0.49	0.54
Nov-06	<b>0.66</b>	0.56	0.45	0.97
Feb-07	<b>0.7</b>	0.5	0.4	0.5
May-07	<b>0.81</b>	0.6	0.6	0.6
Aug-07	<b>0.8</b>	0.5	0.5	0.4
Nov-07	<b>1</b>	0.6	0.5	0.9
Feb-08	<b>1</b>	0.6	0.6	0.7
May-08	<b>1</b>	0.8	0.5	0.6

TEST 2  
STATISTICS FOR POND 17 (WMU 14)

**Fluoride**

<u>Date</u>	<b>Upgradient Well</b>	<b>Downgradient Wells</b>		
	<u>Well 173</u>	<u>Well 171</u>	<u>Well 172</u>	<u>Well 180</u>
Aug-08	<b>0.8</b>	0.6	0.6	0.5
Nov-08	<b>0.7</b>	0.5	0.5	0.9
Feb-09	<b>1.1</b>	0.8	0.7	U
May-09	<b>0.8</b>	0.5	0.4	0.5
Aug-09	<b>1.1</b>	0.8	0.7	0.6
Nov-09	<b>0.9</b>	0.6	0.6	0.9
Feb-10	<b>0.9</b>	0.6	0.6	0.6
Apr-10	<b>1.1</b>	0.7	0.6	0.7
Jul-10	<b>0.77</b>	0.6	1.1	0.22
Nov-10	<b>0.93</b>	0.59	0.55	0.82
Feb-11	<b>0.9</b>	0.7	0.35	0.63
Apr-11	<b>1.1</b>	0.63	0.52	0.73
Jul-11	<b>0.88</b>	0.8	0.73	0.61
Nov-11	<b>0.72</b>	0.52	0.49	0.82
Feb-12	<b>1.3</b>	1	1.6	0.85
May-12	<b>0.86</b>	0.58	0.6	0.48
Aug-12	<b>0.82</b>	0.54	0.57	0.48
Oct-12	<b>0.86</b>	0.57	0.58	0.85
Feb-13	<b>0.87</b>	0.56	0.57	0.6
May-13	<b>0.83</b>	0.54	0.55	0.51
Jul-13	<b>0.87</b>	0.57	0.6	0.51
Nov-13	<b>0.74</b>	0.48	0.57	0.45
Feb-14	<b>0.82</b>	0.53	0.56	0.54
Apr-14	<b>0.84</b>	0.53	0.56	0.53
Jul-14	<b>0.62</b>	0.41	0.44	0.27
Nov-14	<b>0.83</b>	0.53	0.56	0.90

TEST 2  
STATISTICS FOR POND 17 (WMU 14)

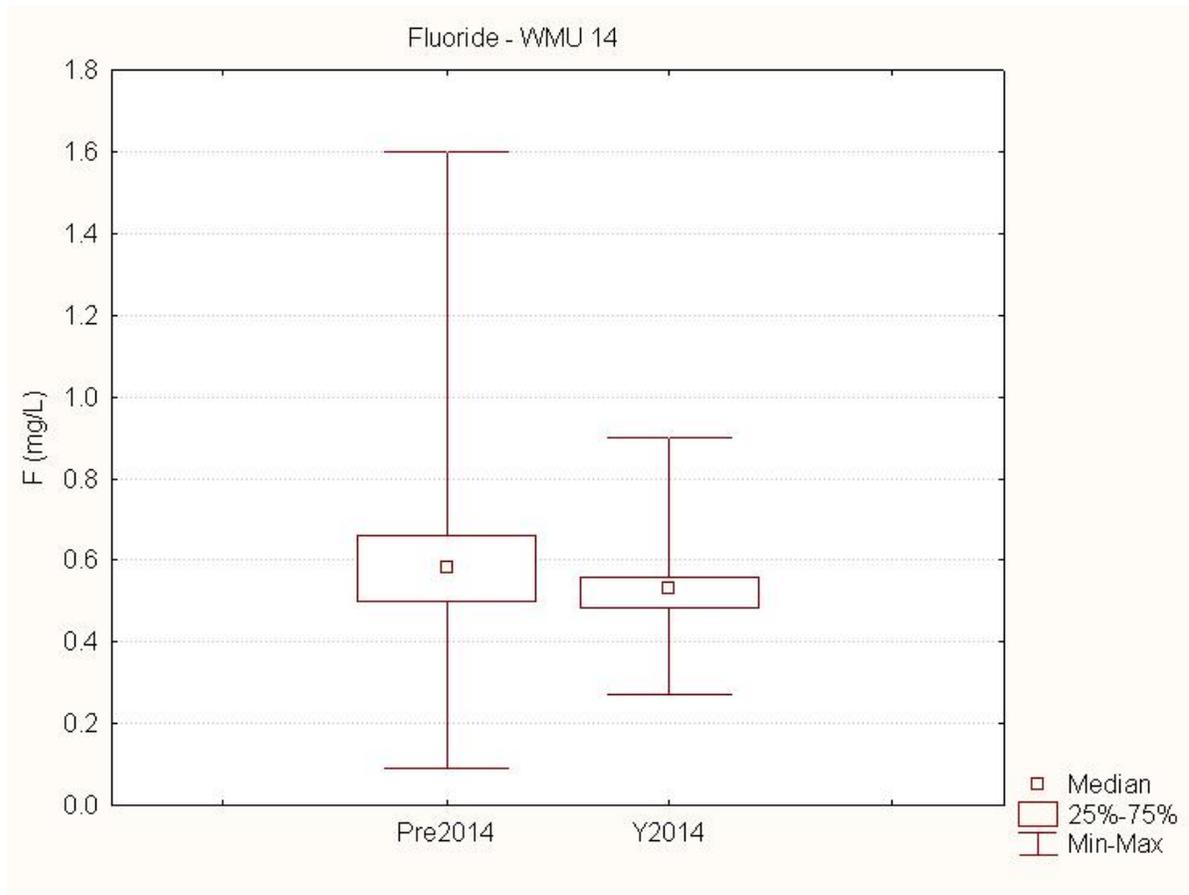
<b>Fluoride</b>				
<u>Date</u>	<b>Upgradient Well</b>	Downgradient Wells		
<b>Test 2 Results</b>	<u>Well 173</u>	<u>Well 171</u>	<u>Well 172</u>	<u>Well 180</u>
	<b>Well 173</b>	Well 171	Well 172	Well 180
Pre-2014 Mean	<b>0.8760</b>	0.6346	0.5215	0.6089
2014 Mean	<b>0.7775</b>	0.5000	0.5300	0.5600
<b>1991-2014 Statistical Summary</b>				
Mean	<b>0.870</b>	0.627	0.522	0.606
Median	<b>0.835</b>	0.610	0.500	0.565
Standard Deviation	<b>0.135</b>	0.095	0.181	0.176
Kurtosis	<b>0.591</b>	2.517	19.224	0.480
Skewness	<b>0.710</b>	0.998	3.654	0.065
Minimum	<b>0.620</b>	0.410	0.300	0.090
Maximum	<b>1.300</b>	1.000	1.600	0.980
Count	<b>64</b>	71	69	68
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.  N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics.  All concentrations in mg/l.</p>				

# WMU 14 TEST 3 FLUORIDE

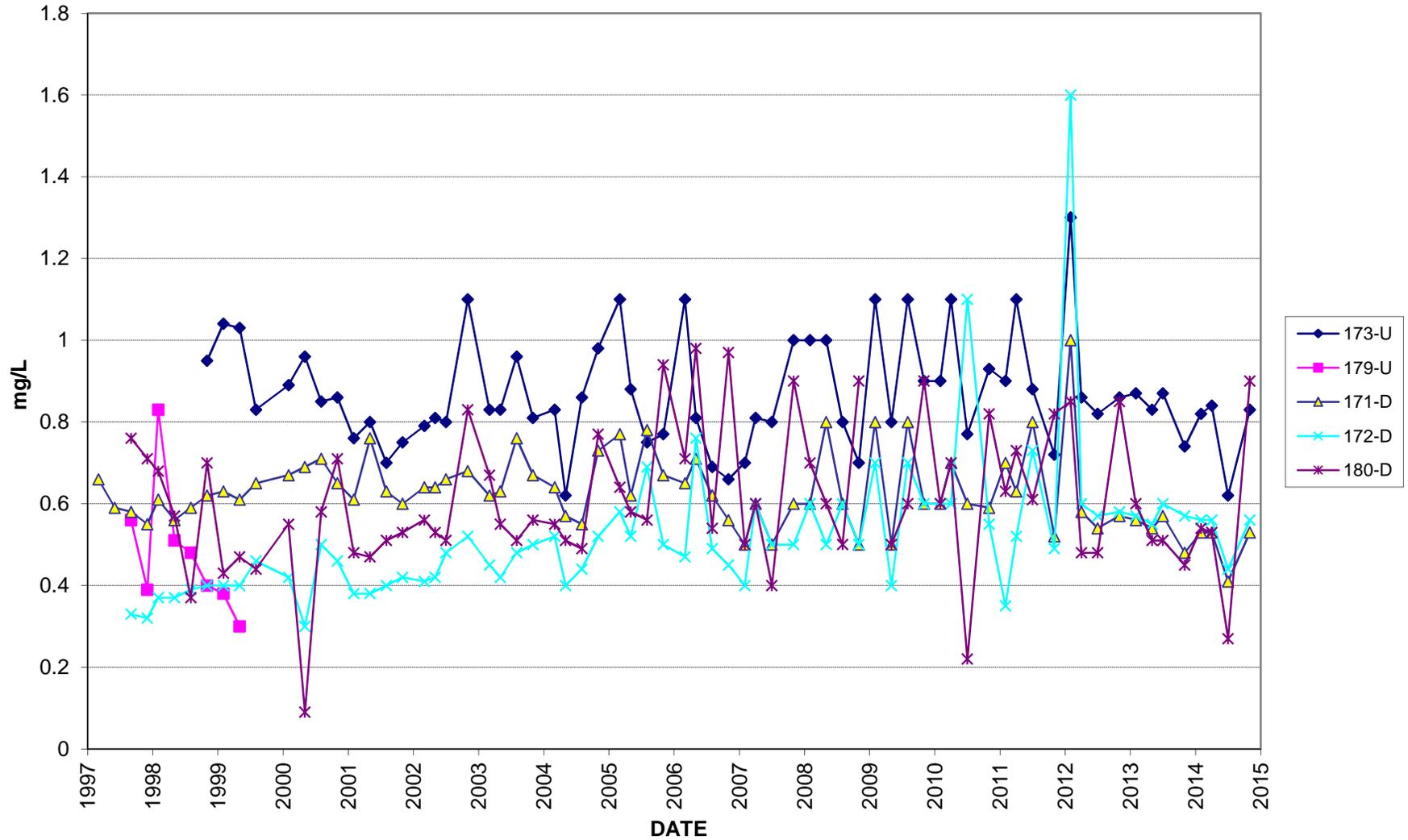
## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Pre-2014	196	0.58	20798.5	859.5	1.56	0.12
Year 2014	12	0.53	937.5			

**Summary:** For downgradient wells, the median of Pre-2014 arsenic concentration is not significantly different from the median of Year 2014 arsenic concentration.



### Fluoride in Groundwater (WMU 14)

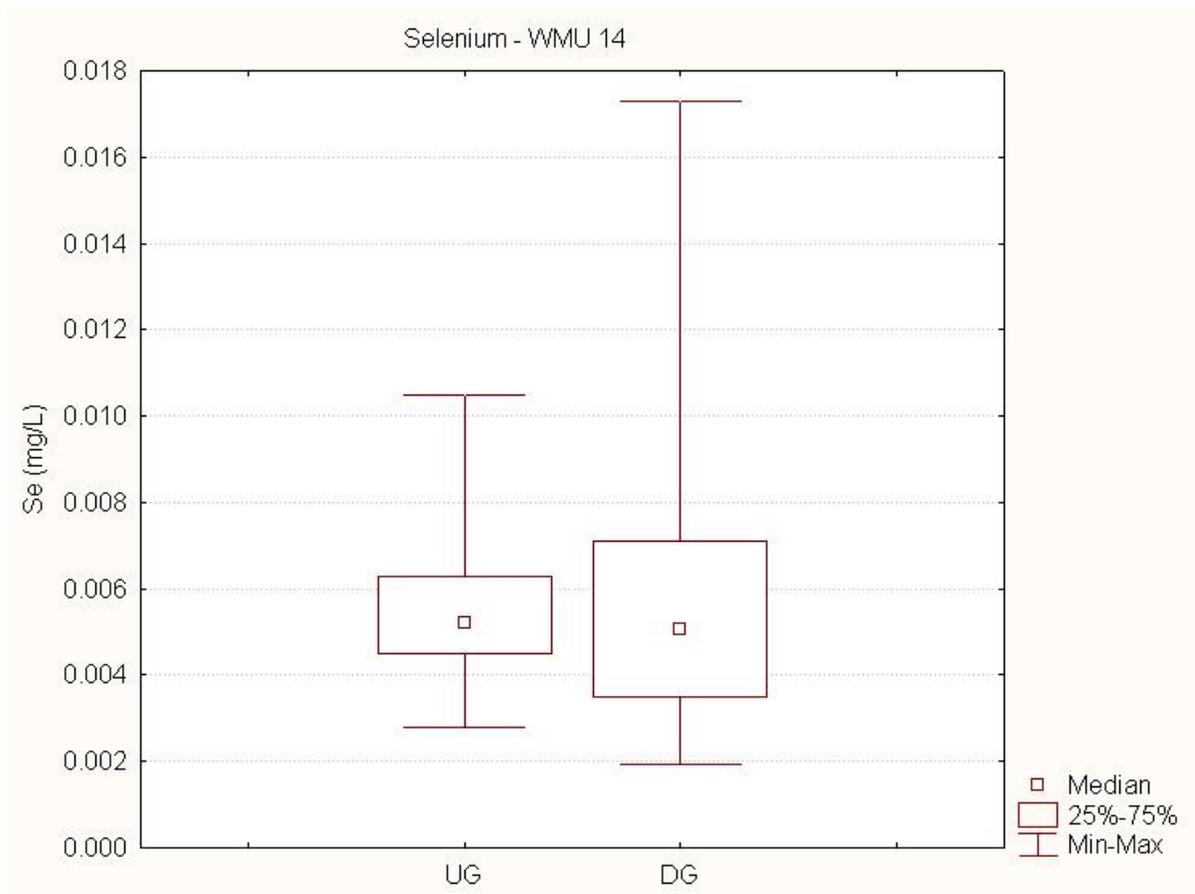


# WMU 14 TEST 1 SELENIUM

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	55	0.0052	5862.5	3597.5	0.998	0.318
Downgradient	144	0.0051	14037.5			

**Summary:** The median selenium concentration of downgradient (DG) wells is not significantly different from the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR POND 17 (WMU 14)

**Selenium**

<u>Date</u>	<b>Upgradient Well</b>	<b>Downgradient Wells</b>		
	<b><u>Well 173</u></b>	<b><u>Well 171</u></b>	<b><u>Well 172</u></b>	<b><u>Well 180</u></b>
Mar-97	N.S	0.006	N.S.	N.S.
Jun-97	N.S	U	N.S.	N.S.
Sep-97	N.S	U	0.005	U
Dec-97	N.S	U	U	0.004
Feb-98	N.S	U	0.003	0.007
May-98	N.S	0.004	0.004	0.008
Aug-98	N.S	U	0.005	0.016
Nov-98	<b>0.004</b>	0.004	0.004	0.007
Feb-99	U	U	0.0049	0.014
May-99	<b>0.0028</b>	U	U	0.011
Aug-99	<b>0.0055</b>	0.0053	U	0.0138
Nov-99	<b>0.0053</b>	U	U	0.0069
Mar-00	<b>0.0046</b>	0.0032	U	0.0124
May-00	<b>0.0028</b>	U	U	0.0132
Aug-00	U	0.0027	U	0.0114
Nov-00	<b>0.0062</b>	0.0061	0.0064	0.0078
Feb-01	U	U	U	0.0148
May-01	<b>0.0052</b>	U	0.0049	0.0151
Aug-01	U	U	U	0.013
Nov-01	<b>0.0063</b>	0.0035	0.0053	0.015
Mar-02	<b>0.0051</b>	U	U	0.0116
May-02	<b>0.0044</b>	U	U	0.0136
Jul-02	<b>0.0074</b>	0.0044	U	0.0158
Nov-02	U	0.0036	U	0.0048
Mar-03	U	U	U	U
May-03	U	0.0048	0.0037	U
Aug-03	<b>0.0046</b>	0.0039	0.0033	0.0124
Nov-03	<b>0.0054</b>	0.0041	U	0.0106
Mar-04	<b>0.006</b>	0.0057	0.0034	0.014
May-04	<b>0.0089</b>	0.0037	0.0053	0.0133
Aug-04	<b>0.0084</b>	U	0.0026	0.0173
Nov-04	<b>0.0049</b>	U	U	U
Mar-05	<b>0.0069</b>	U	0.0037	0.0123
May-05	<b>0.0096</b>	0.0055	0.0061	0.014
Aug-05	<b>0.0069</b>	0.0026	U	0.0123
Nov-05	<b>0.0074</b>	0.0052	0.004	0.0058
Feb-06	<b>0.0045</b>	U	0.0043	0.0062
May-06	<b>0.0091</b>	0.0038	0.0043	0.0052
Aug-06	<b>0.0105</b>	0.0071	0.0079	0.015
Nov-06	<b>0.0057</b>	0.003	0.0058	0.0065
Feb-07	<b>0.0047</b>	U	U	0.0055
May-07	<b>0.0062</b>	0.0049	0.0038	0.0121
Aug-07	<b>0.0054</b>	U	0.0028	0.0096
Nov-07	<b>0.0076</b>	U	U	0.0055
Feb-08	<b>0.0066</b>	U	0.0029	0.0075
May-08	<b>0.0052</b>	U	U	0.0121

TEST 2  
STATISTICS FOR POND 17 (WMU 14)

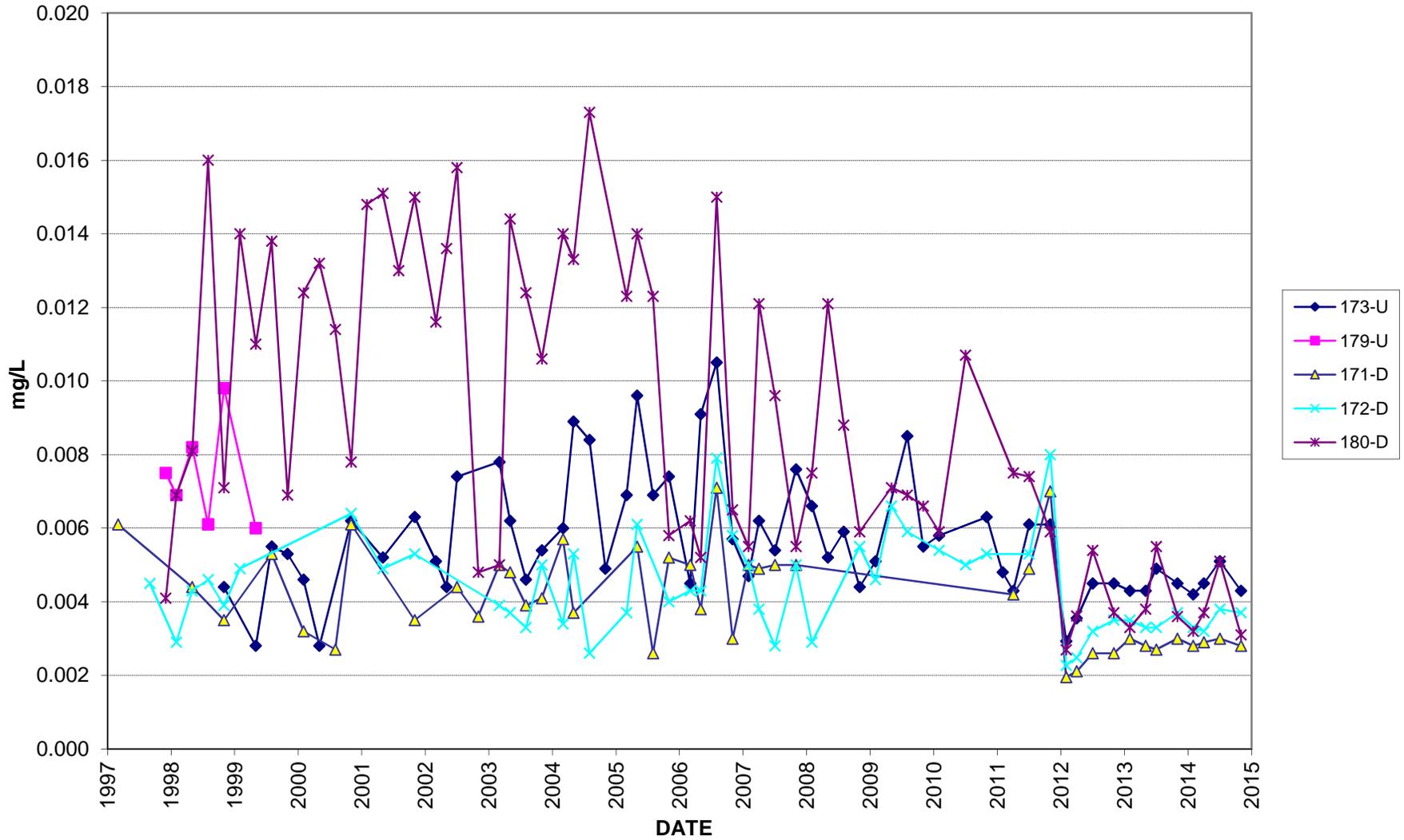
**Selenium**

<u>Date</u>	<b>Upgradient Well</b>	<b>Downgradient Wells</b>		
	<b><u>Well 173</u></b>	<b><u>Well 171</u></b>	<b><u>Well 172</u></b>	<b><u>Well 180</u></b>
Aug-08	<b>0.0059</b>	U	U	0.0088
Nov-08	<b>0.0044</b>	U	0.0055	0.0059
Feb-09	<b>0.0051</b>	U	0.0046	U
May-09	U	U	0.0066	0.0071
Aug-09	<b>0.0085</b>	U	0.0059	0.0069
Nov-09	<b>0.0055</b>	U	U	0.0066
Feb-10	<b>0.0058</b>	U	0.0054	0.0059
Apr-10	U	U	U	U
Jul-10	U	U	0.005	0.0107
Nov-10	<b>0.0063</b>	U	0.0053	U
Feb-11	<b>0.0048</b>	U	U	U
Apr-11	<b>0.0043</b>	0.0042	U	0.0075
Jul-11	<b>0.0061</b>	0.0049	0.0053	0.0074
Nov-11	<b>0.0061</b>	0.0070	0.008	0.0059
Feb-12	<b>0.00293</b>	0.0020	0.00227	0.00269
May-12	<b>0.00355</b>	0.0021	0.00248	0.00361
Aug-12	<b>0.0045</b>	0.0026	0.0032	0.0054
Oct-12	<b>0.0045</b>	0.0026	0.0035	0.0037
Feb-13	<b>0.0043</b>	0.0030	0.0035	0.0033
May-13	<b>0.0043</b>	0.0028	0.0033	0.0038
Jul-13	<b>0.0049</b>	0.0027	0.0033	0.0055
Nov-13	<b>0.0045</b>	0.0030	0.0037	0.0036
Feb-14	<b>0.0042</b>	0.0028	0.0033	0.0032
Apr-14	<b>0.0045</b>	0.0029	0.0032	0.0037
Jul-14	<b>0.0051</b>	0.0030	0.0038	0.0051
Nov-14	<b>0.0043</b>	0.0028	0.0037	0.0031

TEST 2  
STATISTICS FOR POND 17 (WMU 14)

<b>Selenium</b>				
<u>Date</u>	<b>Upgradient Well</b>	<u>Downgradient Wells</u>		
	<b><u>Well 173</u></b>	<u>Well 171</u>	<u>Well 172</u>	<u>Well 180</u>
<b>Test 2 Results</b>	<b>Well 173</b>	Well 171	Well 172	Well 180
Pre-2014 Mean	<b>0.0057</b>	0.0041	0.0045	0.0093
2014 Mean	<b>0.0045</b>	0.0029	0.0035	0.0038
<b>1991-2014 Statistical Summary</b>				
Mean	<b>0.006</b>	0.004	0.004	0.009
Median	<b>0.005</b>	0.004	0.004	0.008
Standard Deviation	<b>0.002</b>	0.001	0.001	0.004
Kurtosis	<b>0.894</b>	-0.275	0.507	-1.294
Skewness	<b>0.955</b>	0.753	0.847	0.258
Minimum	<b>0.003</b>	0.002	0.002	0.003
Maximum	<b>0.011</b>	0.007	0.008	0.017
Count	<b>55</b>	37	45	62
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.            N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics.            All concentrations in mg/l.</p>				

### Selenium in Groundwater (WMU 14)



# **POND 18 CELL A**

## **Waste Management Unit 15**

**Note:**

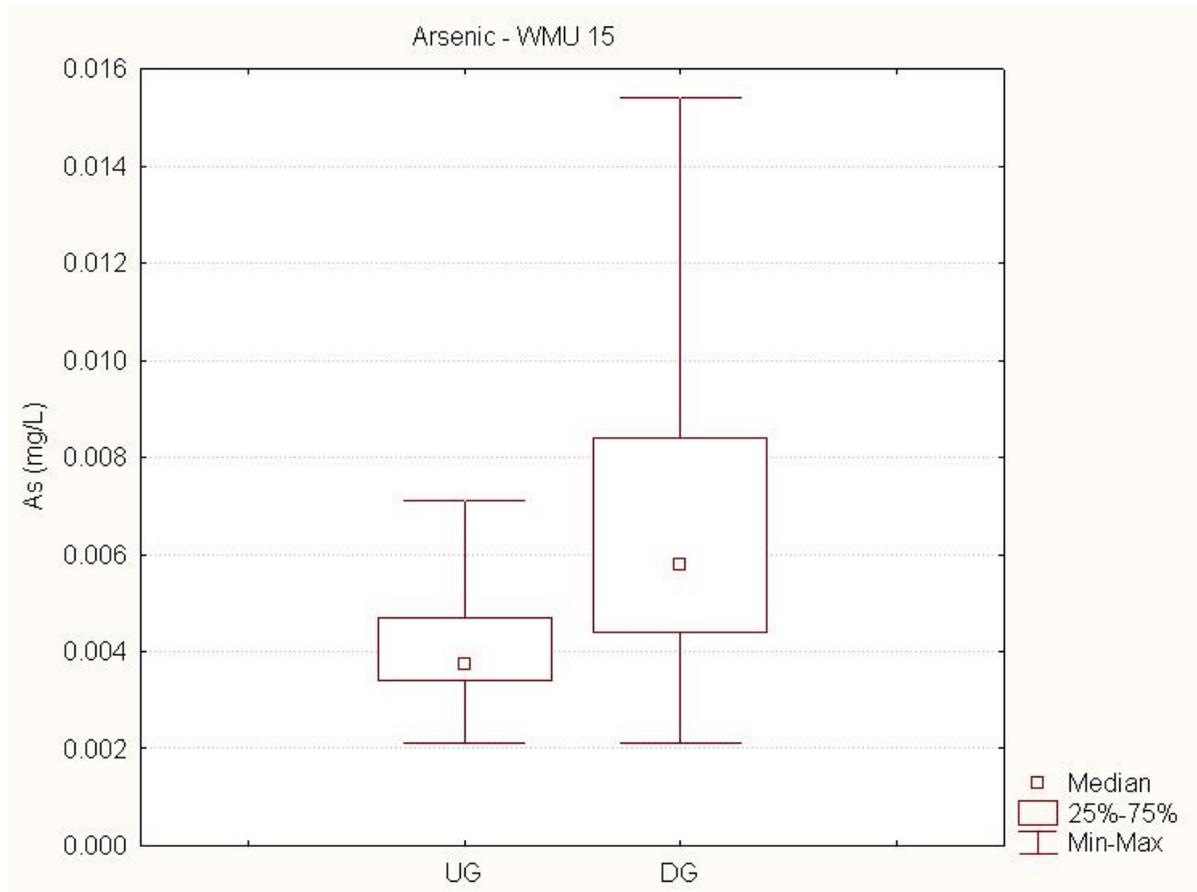
- 1. Time series plot scales are variable depending on the concentrations.**
- 2. Undetected values are not plotted on time series plots**

# WMU 15 TEST 1 ARSENIC

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	56	0.0038	3621.0	2025.0	-6.99	<0.0001
Downgradient	188	0.0058	26269.0			

**Summary:** The median arsenic concentration of downgradient (DG) wells is statistically higher than the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR POND 18 CELL A (WMU 15)

**Arsenic**

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>	
	<u>Well 174</u>	<u>Well 154</u>	<u>Well 177</u>	<u>Well 178</u>
Dec-92	N.S.	U	N.S.	N.S.
Mar-93	N.S.	0.0058	N.S.	N.S.
Jun-93	N.S.	0.0081	N.S.	N.S.
Sep-93	N.S.	U	N.S.	N.S.
Dec-93	N.S.	0.0033	N.S.	N.S.
Mar-94	N.S.	0.0070	N.S.	N.S.
Jun-94	N.S.	0.0068	N.S.	N.S.
Sep-94	N.S.	0.0061	N.S.	N.S.
Dec-94	N.S.	U	N.S.	N.S.
Mar-95	N.S.	0.0031	N.S.	N.S.
Jun-95	N.S.	0.0064	N.S.	N.S.
Sep-95	N.S.	U	N.S.	N.S.
Dec-95	N.S.	0.0029	N.S.	N.S.
Mar-96	N.S.	U	N.S.	N.S.
Jun-96	N.S.	0.0088	N.S.	N.S.
Sep-96	N.S.	U	N.S.	N.S.
Dec-96	N.S.	U	N.S.	N.S.
Mar-97	N.S.	0.0050	N.S.	N.S.
Jun-97	N.S.	U	N.S.	N.S.
Sep-97	N.S.	0.0058	N.S.	N.S.
Dec-97	N.S.	U	N.S.	N.S.
Feb-98	N.S.	U	N.S.	N.S.
May-98	N.S.	0.0078	N.S.	N.S.
Aug-98	N.S.	0.0086	N.S.	N.S.
Nov-98	U	0.0065	U	0.0064
Feb-99	<b>0.0032</b>	0.0048	U	0.0084
May-99	<b>0.0047</b>	0.0068	0.0045	0.0099
Aug-99	<b>0.0033</b>	0.0062	0.0044	0.0066
Nov-99	<b>0.0054</b>	0.0068	0.0058	0.0093
Mar-00	U	U	U	U
May-00	<b>0.0028</b>	0.0073	0.0032	0.0080
Aug-00	U	0.0070	0.0047	0.0091
Nov-00	<b>0.0054</b>	0.0087	0.0069	0.0125
Feb-01	<b>0.0034</b>	0.0064	0.0047	0.0069
May-01	<b>0.0041</b>	0.0045	0.0037	0.0087
Aug-01	<b>0.0042</b>	0.0055	0.0036	0.0072
Nov-01	<b>0.0031</b>	0.0062	N.S.	0.0079
Mar-02	<b>0.0042</b>	0.0052	0.0039	0.0082
May-02	<b>0.0035</b>	0.0049	0.0036	0.0078
Jul-02	<b>0.0049</b>	0.0051	0.0047	0.0079
Nov-02	<b>0.0036</b>	0.0045	0.0046	0.0064
Mar-03	U	U	U	U
May-03	<b>0.0043</b>	0.0045	0.0048	0.0090
Aug-03	<b>0.0040</b>	0.0064	0.0057	0.0102
Nov-03	<b>0.0045</b>	0.0030	0.0030	0.0076
Mar-04	<b>0.0059</b>	0.0063	0.0047	0.0110

TEST 2  
STATISTICS FOR POND 18 CELL A (WMU 15)

**Arsenic**

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>	
	<u>Well 174</u>	<u>Well 154</u>	<u>Well 177</u>	<u>Well 178</u>
May-04	<b>0.0057</b>	0.0055	0.0050	0.0111
Aug-04	<b>U</b>	0.0058	0.0026	0.0081
Nov-04	<b>0.0026</b>	0.0048	0.0033	0.0086
Feb-05	<b>0.0059</b>	0.0070	0.0054	0.0109
May-05	<b>0.0037</b>	0.0040	0.0042	0.0099
Aug-05	<b>0.0056</b>	0.0060	0.0066	0.0127
Nov-05	<b>0.0034</b>	0.0049	0.0033	0.0089
Feb-06	<b>0.0032</b>	0.0044	0.0040	0.0084
May-06	<b>0.0033</b>	0.0038	0.0044	0.0090
Aug-06	<b>0.0071</b>	0.0071	0.0074	0.0154
Nov-06	<b>0.0051</b>	0.0054	0.0043	0.0110
Feb-07	<b>0.0039</b>	0.0059	0.0045	0.0088
May-07	<b>0.0043</b>	0.0043	0.0046	0.0096
Aug-07	<b>0.0021</b>	0.0032	0.0021	0.0063
Nov-07	<b>0.0031</b>	U	U	0.0085
Feb-08	<b>U</b>	U	U	U
May-08	<b>U</b>	U	U	U
Aug-08	<b>0.0038</b>	0.0057	0.0038	0.0097
Nov-08	<b>0.0041</b>	0.0065	0.0056	0.0105
Feb-09	<b>U</b>	U	0.0033	0.0096
May-09	<b>0.0037</b>	0.0048	0.0042	0.0093
Aug-09	<b>U</b>	U	0.0032	0.0098
Nov-09	<b>0.0055</b>	0.0050	0.0060	0.0126
Feb-10	<b>0.0041</b>	0.0054	0.0043	0.0093
Apr-10	<b>0.0053</b>	0.0056	0.0059	0.0067
Jul-10	<b>0.0035</b>	0.0041	0.0046	0.0096
Nov-10	<b>0.0047</b>	0.0072	0.0054	0.0123
Feb-11	<b>0.0050</b>	U	U	0.0081
Apr-11	<b>0.0041</b>	0.0055	0.0043	0.0113
Jul-11	<b>0.0060</b>	0.0052	0.0057	0.0120
Nov-11	<b>0.0045</b>	0.0047	0.0035	0.0110
Feb-12	<b>0.0029</b>	0.0039	0.0037	0.0077
May-12	<b>0.0029</b>	0.0041	0.0038	0.0086
Aug-12	<b>0.0034</b>	0.0043	0.0041	0.0093
Oct-12	<b>0.0036</b>	0.0045	0.0041	0.0099
Feb-13	<b>0.0034</b>	0.0044	0.0041	0.0090
May-13	<b>0.0036</b>	0.0046	0.0042	0.0092
Jul-13	<b>0.0035</b>	0.0044	0.0043	0.0094
Nov-13	<b>0.0032</b>	0.0045	0.0041	0.0110
Feb-14	<b>0.0035</b>	0.0046	0.0043	0.0094
Apr-14	<b>0.0035</b>	0.0043	0.0039	0.0088
Jul-14	<b>0.0037</b>	0.0046	0.0045	0.0096
Nov-14	<b>0.0035</b>	0.0046	0.0046	0.0120

TEST 2  
STATISTICS FOR POND 18 CELL A (WMU 15)

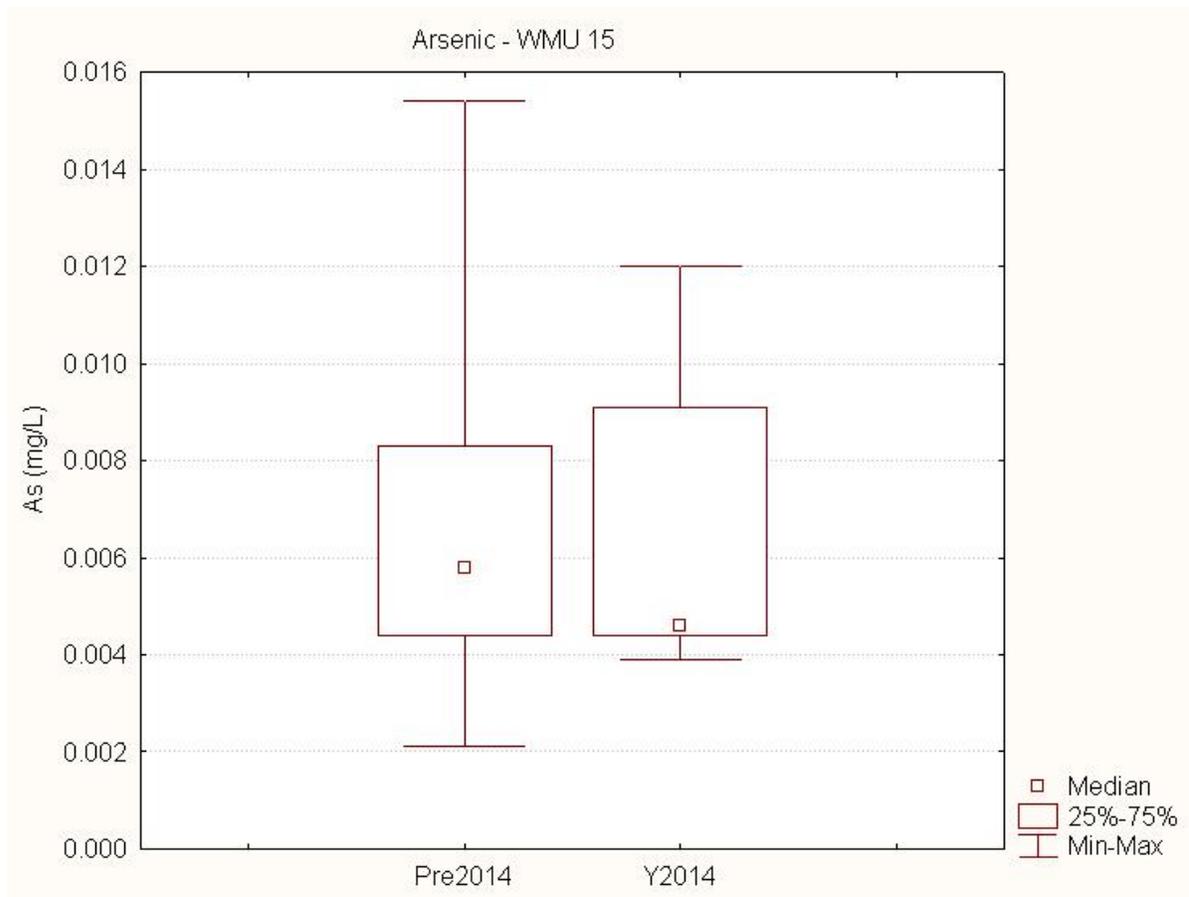
<b>Arsenic</b>				
<u>Date</u>	Upgradient Wells	Downgradient Wells		
	<u>Well 174</u>	<u>Well 154</u>	<u>Well 177</u>	<u>Well 178</u>
<b>Test 2 Results</b>				
	<b>Well 174</b>	Well 154	Well 177	Well 178
Pre-2014 Mean	<b>0.0062</b>	0.0051	0.0070	0.0093
2014 Mean	<b>0.0036</b>	0.0045	0.0043	0.0100
<b>1991-2014 Statistical Summary</b>				
Mean	<b>0.006</b>	0.005	0.007	0.009
Median	<b>0.004</b>	0.005	0.004	0.009
Standard Deviation	<b>0.008</b>	0.001	0.003	0.002
Kurtosis	<b>0.292</b>	-0.119	0.995	1.099
Skewness	<b>0.774</b>	0.457	0.659	0.714
Minimum	<b>0.002</b>	0.003	0.002	0.006
Maximum	<b>0.078</b>	0.009	0.015	0.015
Count	<b>56</b>	71	56	61
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.            N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics.            All concentrations in mg/l.</p>				

# WMU 15 TEST 3 ARSENIC

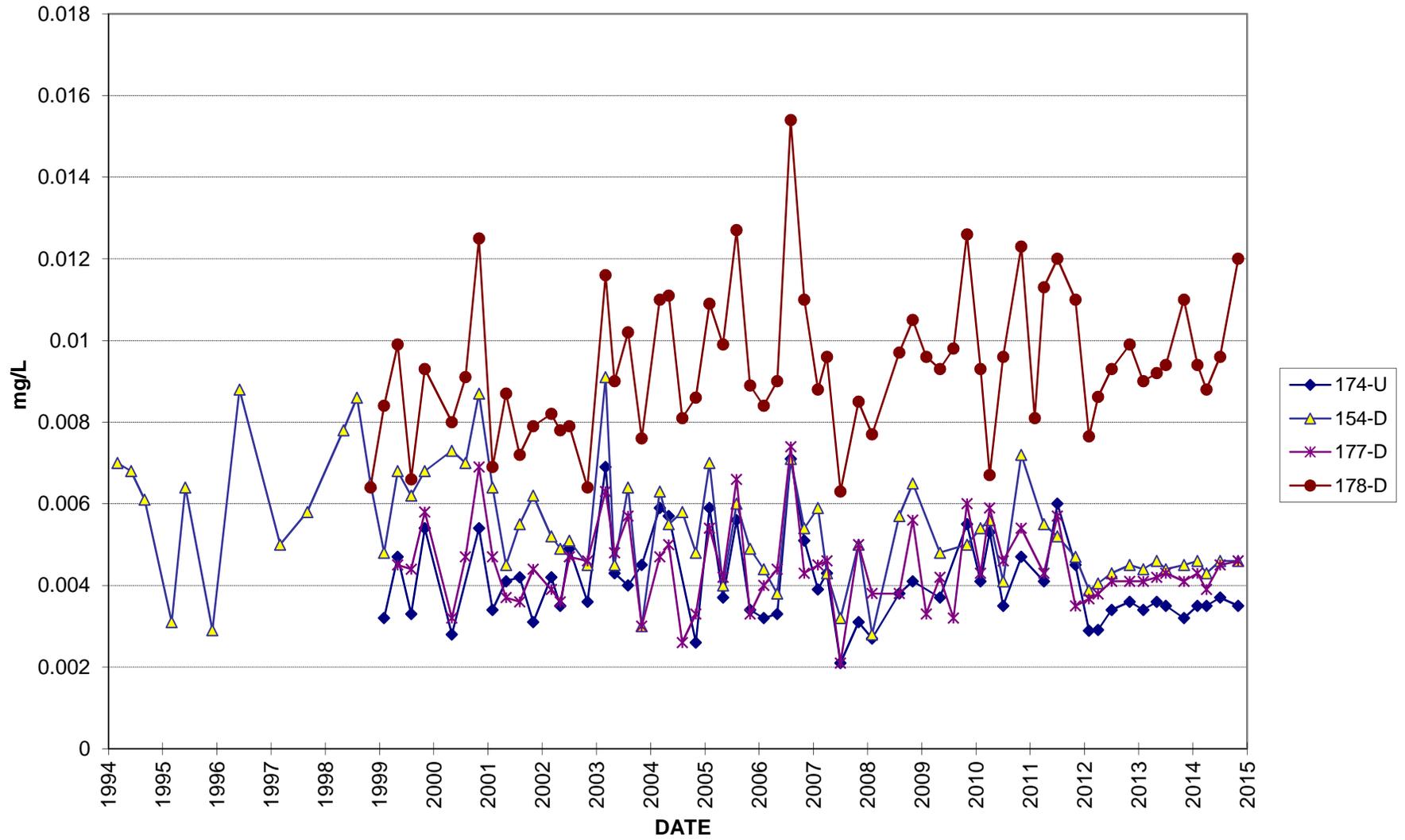
## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Pre-2014	176	0.0058	16687.0	1001.0	0.30	0.76
Year 2014	12	0.0046	1079.0			

**Summary:** For downgradient wells, the median of Pre-2014 arsenic concentration is not significantly different from the median of Year 2014 arsenic concentration.



### Arsenic in Groundwater (WMU 15)

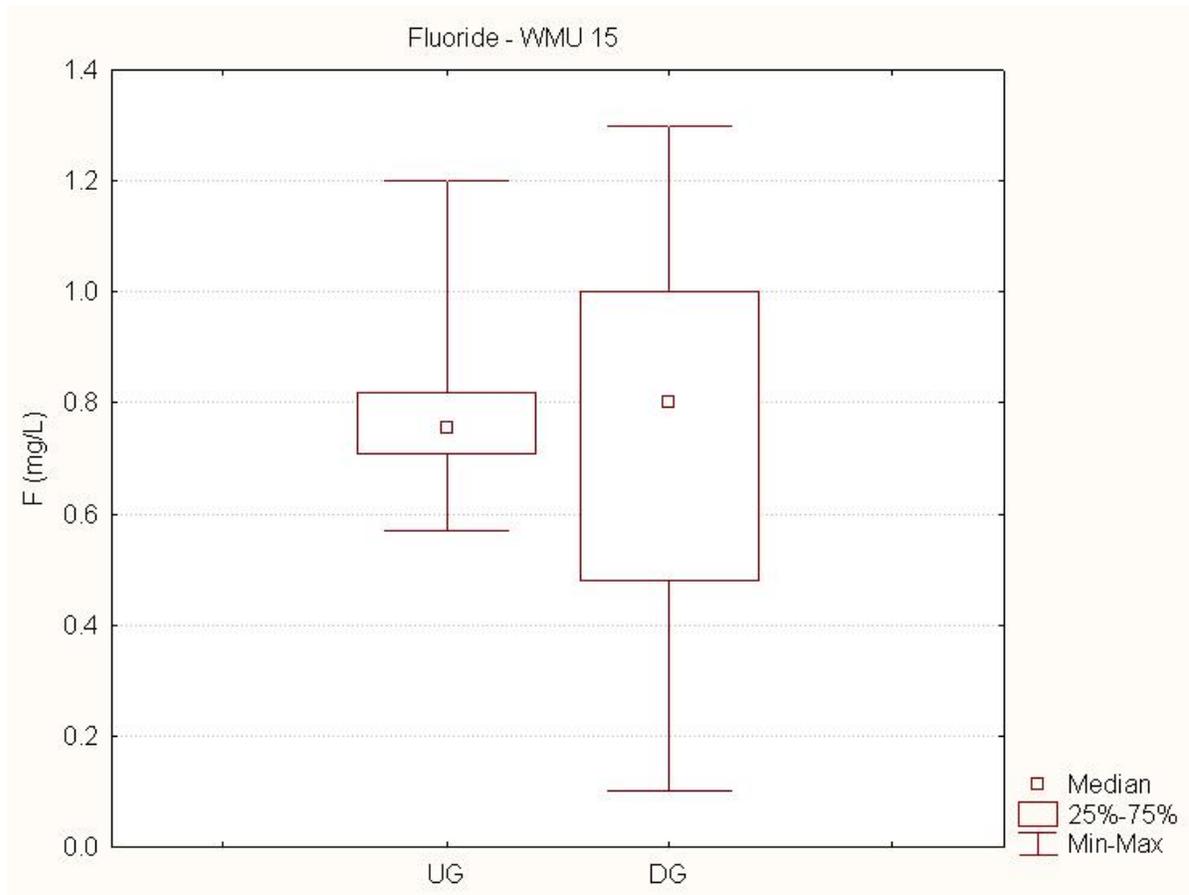


# WMU 15 TEST 1 FLUORIDE

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	64	0.78	8433.0	6353.0	-0.77	0.44
Downgradient	212	0.80	29793.0			

**Summary:** The median fluoride concentration of downgradient (DG) wells is not significantly different from the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR POND 18 CELL A (WMU 15)

**Fluoride**

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>	
	<u>Well 174</u>	<u>Well 154</u>	<u>Well 177</u>	<u>Well 178</u>
Dec-92	N.S.	1.200	N.S.	N.S.
Mar-93	N.S.	1.200	N.S.	N.S.
Jun-93	N.S.	1.100	N.S.	N.S.
Sep-93	N.S.	0.900	N.S.	N.S.
Dec-93	N.S.	1.200	N.S.	N.S.
Mar-94	N.S.	1.300	N.S.	N.S.
Jun-94	N.S.	1.100	N.S.	N.S.
Sep-94	N.S.	1.100	N.S.	N.S.
Dec-94	N.S.	1.080	N.S.	N.S.
Mar-95	N.S.	1.150	N.S.	N.S.
Jun-95	N.S.	1.190	N.S.	N.S.
Sep-95	N.S.	1.190	N.S.	N.S.
Dec-95	N.S.	0.910	N.S.	N.S.
Mar-96	N.S.	0.936	N.S.	N.S.
Jun-96	N.S.	1.110	N.S.	N.S.
Sep-96	N.S.	1.200	N.S.	N.S.
Dec-96	N.S.	1.060	N.S.	N.S.
Mar-97	N.S.	1.040	N.S.	N.S.
Jun-97	N.S.	1.030	N.S.	N.S.
Sep-97	N.S.	0.970	N.S.	N.S.
Dec-97	N.S.	1.010	N.S.	N.S.
Feb-98	N.S.	1.080	N.S.	N.S.
May-98	N.S.	1.080	N.S.	N.S.
Aug-98	N.S.	1.050	N.S.	N.S.
Nov-98	<b>0.760</b>	1.210	0.830	1.060
Feb-99	<b>0.670</b>	1.040	0.650	0.300
May-99	<b>0.710</b>	1.140	0.820	0.360
Aug-99	<b>0.720</b>	1.100	0.770	0.220
Nov-99	U	U	U	U
Mar-00	<b>0.77</b>	1.10	0.8	0.36
May-00	<b>0.64</b>	1.10	0.83	U
Aug-00	<b>0.88</b>	1.10	U	0.29
Nov-00	<b>0.75</b>	1.10	0.78	0.46
Feb-01	<b>0.67</b>	0.99	0.72	0.21
May-01	<b>0.85</b>	1.00	0.83	0.27
Aug-01	<b>0.57</b>	1.00	0.77	0.28
Nov-01	<b>0.68</b>	1.10	N.S.	0.21
Mar-02	<b>0.73</b>	1.10	0.76	0.29
May-02	<b>0.75</b>	1.10	0.76	0.33
Jul-02	<b>0.75</b>	1.10	0.77	0.33
Nov-02	<b>0.92</b>	1.10	0.76	0.31
Mar-03	<b>0.72</b>	1.00	0.73	0.3
May-03	<b>0.73</b>	1.00	0.76	0.24
Aug-03	<b>0.81</b>	1.00	0.78	0.26
Nov-03	<b>0.74</b>	1.00	0.74	0.25
Mar-04	<b>0.78</b>	1.00	0.75	0.2

TEST 2  
STATISTICS FOR POND 18 CELL A (WMU 15)

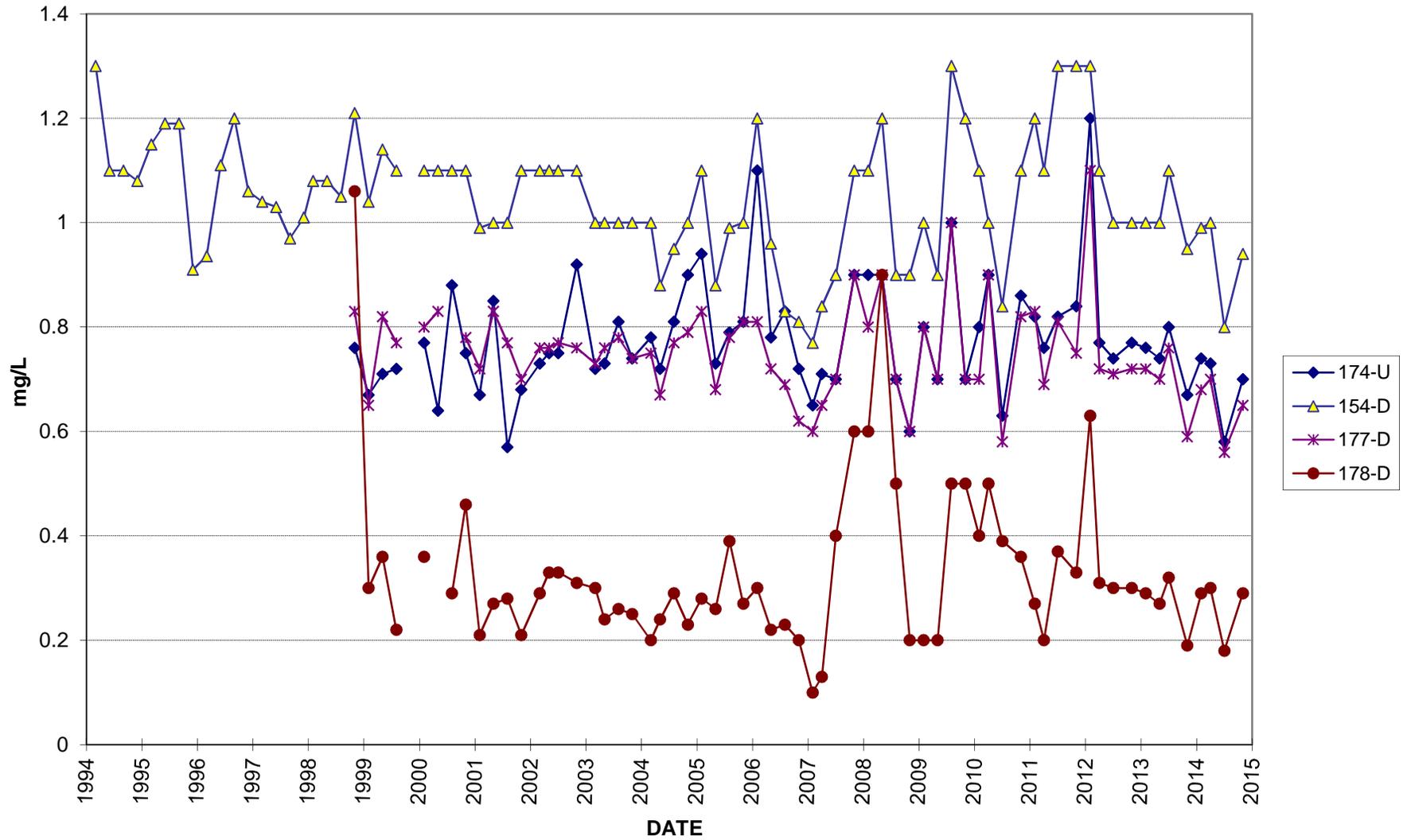
**Fluoride**

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>	
	<u>Well 174</u>	<u>Well 154</u>	<u>Well 177</u>	<u>Well 178</u>
May-04	<b>0.72</b>	0.88	0.67	0.24
Aug-04	<b>0.81</b>	0.95	0.77	0.29
Nov-04	<b>0.90</b>	1.00	0.79	0.23
Feb-05	<b>0.94</b>	1.1	0.83	0.28
May-05	<b>0.73</b>	0.88	0.68	0.26
Aug-05	<b>0.79</b>	0.99	0.78	0.39
Nov-05	<b>0.81</b>	1	0.81	0.27
Feb-06	<b>1.1</b>	1.2	0.81	0.3
May-06	<b>0.78</b>	0.96	0.72	0.22
Aug-06	<b>0.83</b>	0.83	0.69	0.23
Nov-06	<b>0.72</b>	0.81	0.62	0.2
Feb-07	<b>0.65</b>	0.77	0.6	0.1
May-07	<b>0.71</b>	0.84	0.65	0.13
Aug-07	<b>0.7</b>	0.9	0.7	0.4
Nov-07	<b>0.9</b>	1.1	0.9	0.6
Feb-08	<b>0.9</b>	1.1	0.8	0.6
May-08	<b>0.9</b>	1.2	0.9	0.9
Aug-08	<b>0.7</b>	0.9	0.7	0.5
Nov-08	<b>0.6</b>	0.9	0.6	0.2
Feb-09	<b>0.8</b>	1	0.8	0.2
May-09	<b>0.7</b>	0.9	0.7	0.2
Aug-09	<b>1</b>	1.3	1	0.5
Nov-09	<b>0.7</b>	1.2	0.7	0.5
Feb-10	<b>0.8</b>	1.1	0.7	0.4
Apr-10	<b>0.9</b>	1	0.9	0.5
Jul-10	<b>0.63</b>	0.84	0.58	0.39
Nov-10	<b>0.86</b>	1.1	0.82	0.36
Feb-11	<b>0.82</b>	1.2	0.83	0.27
Apr-11	<b>0.76</b>	1.1	0.69	0.2
Jul-11	<b>0.82</b>	1.3	0.81	0.37
Nov-11	<b>0.84</b>	1.3	0.75	0.33
Feb-12	<b>1.2</b>	1.3	1.1	0.63
May-12	<b>0.77</b>	1.1	0.72	0.31
Aug-12	<b>0.74</b>	1	0.71	0.3
Oct-12	<b>0.77</b>	1	0.72	0.3
Feb-13	<b>0.76</b>	1	0.72	0.29
May-13	<b>0.74</b>	1	0.7	0.27
Jul-13	<b>0.8</b>	1.1	0.76	U
Nov-13	<b>0.67</b>	0.95	0.59	0.3
Feb-14	<b>0.74</b>	0.99	0.68	0.29
Apr-14	<b>0.73</b>	1.00	0.70	0.30
Jul-14	<b>0.58</b>	0.80	0.56	0.18
Nov-14	<b>0.70</b>	0.94	0.65	0.29

TEST 2  
STATISTICS FOR POND 18 CELL A (WMU 15)

<b>Fluoride</b>				
<u>Date</u>	<b>Upgradient Wells</b>	<b>Downgradient Wells</b>		
	<u>Well 174</u>	<u>Well 154</u>	<u>Well 177</u>	<u>Well 178</u>
<b>Test 2 Results</b>				
	<b>Well 174</b>	Well 154	Well 177	Well 178
Pre-2014 Mean	<b>0.6994</b>	0.9192	0.5467	0.3360
2014 Mean	<b>0.6875</b>	0.9325	0.6475	0.2650
<b>1991-2014 Statistical Summary</b>				
Mean	<b>0.699</b>	0.920	0.541	0.331
Median	<b>0.755</b>	1.055	0.755	0.290
Standard Deviation	<b>0.135</b>	0.223	0.248	0.162
Kurtosis	<b>3.147</b>	-0.210	2.485	7.715
Skewness	<b>1.258</b>	0.005	0.834	2.410
Minimum	<b>0.570</b>	0.770	0.560	0.100
Maximum	<b>1.200</b>	1.300	1.100	1.060
Count	<b>64</b>	88	62	62
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.            N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics.            All concentrations in mg/l.</p>				

### Fluoride in Groundwater (WMU 15)

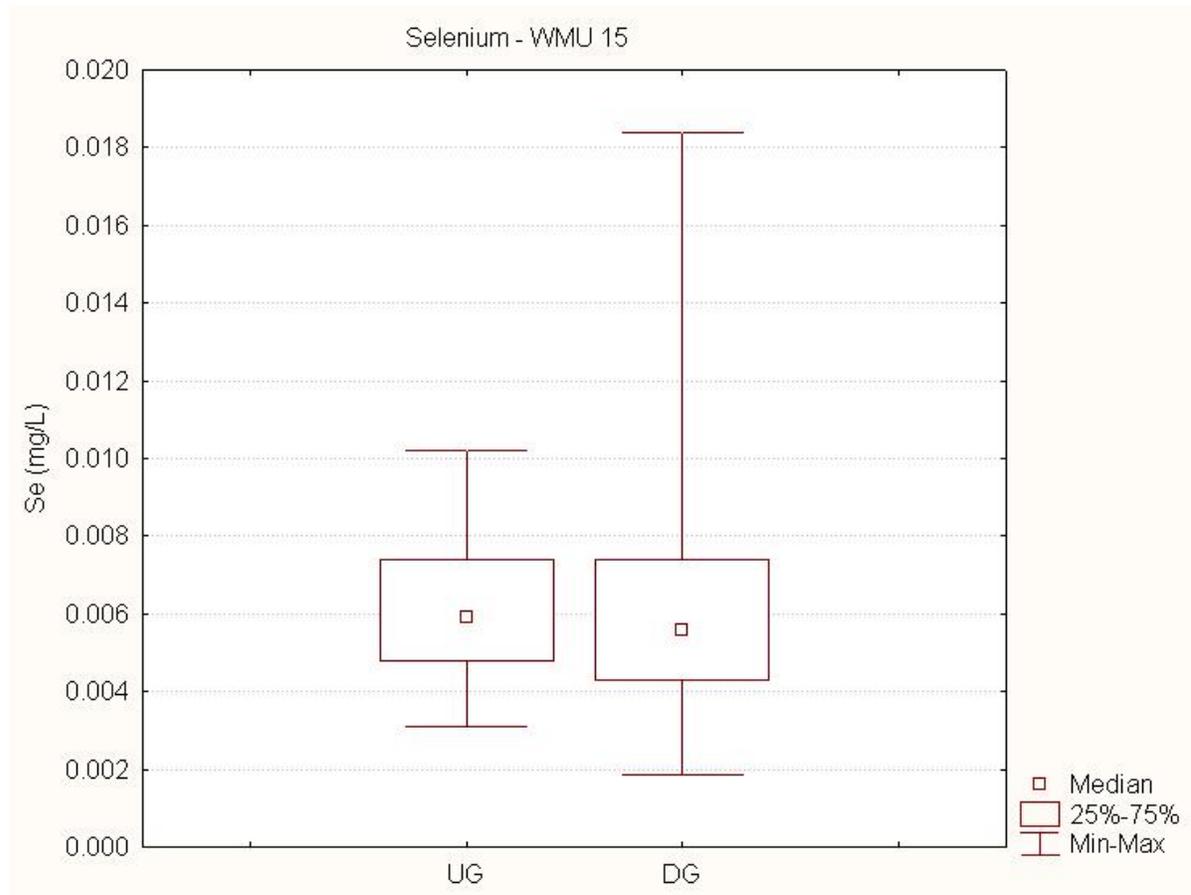


# WMU 15 TEST 1 SELENIUM

## *Mann-Whitney U Test Results*

Well Type	N	Median	Rank Sum	U	Z	p
Upgradient	59	0.0062	6538.0	4023.0	0.95	0.34
Downgradient	149	0.0056	15198.0			

**Summary:** The median selenium concentration of downgradient (DG) wells is not significantly different from the median concentration of upgradient (UG) wells.



TEST 2  
STATISTICS FOR POND 18 CELL A (WMU 15)

**Selenium**

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>	
	<u>Well 174</u>	<u>Well 154</u>	<u>Well 177</u>	<u>Well 178</u>
Dec-92	N.S.	U	N.S.	N.S.
Mar-93	N.S.	0.0023	N.S.	N.S.
Jun-93	N.S.	U	N.S.	N.S.
Sep-93	N.S.	U	N.S.	N.S.
Dec-93	N.S.	U	N.S.	N.S.
Mar-94	N.S.	U	N.S.	N.S.
Jun-94	N.S.	U	N.S.	N.S.
Sep-94	N.S.	U	N.S.	N.S.
Dec-94	N.S.	U	N.S.	N.S.
Mar-95	N.S.	U	N.S.	N.S.
Jun-95	N.S.	U	N.S.	N.S.
Sep-95	N.S.	0.0184	N.S.	N.S.
Dec-95	N.S.	U	N.S.	N.S.
Mar-96	N.S.	U	N.S.	N.S.
Jun-96	N.S.	U	N.S.	N.S.
Sep-96	N.S.	U	N.S.	N.S.
Dec-96	N.S.	U	N.S.	N.S.
Mar-97	N.S.	0.0042	N.S.	N.S.
Jun-97	N.S.	0.0046	N.S.	N.S.
Sep-97	N.S.	U	N.S.	N.S.
Dec-97	N.S.	0.0047	N.S.	N.S.
Feb-98	N.S.	0.0032	N.S.	N.S.
May-98	N.S.	U	N.S.	N.S.
Aug-98	N.S.	0.0067	N.S.	N.S.
Nov-98	U	U	U	U
Feb-99	<b>0.0074</b>	U	U	0.0051
May-99	U	U	U	U
Aug-99	<b>0.0075</b>	U	0.0051	0.0070
Nov-99	<b>0.0064</b>	U	U	0.0083
Mar-00	<b>0.0067</b>	U	0.0039	0.0099
May-00	<b>0.0031</b>	U	0.0041	0.0109
Aug-00	U	U	0.0058	0.0050
Nov-00	<b>0.0061</b>	U	0.0065	0.0086
Feb-01	<b>0.0045</b>	U	U	0.0091
May-01	<b>0.0057</b>	U	U	0.0075
Aug-01	<b>0.0040</b>	U	U	0.0064
Nov-01	<b>0.0037</b>	U	N.S.	0.0129
Mar-02	<b>0.0043</b>	U	U	0.0061
May-02	<b>0.0056</b>	U	0.0046	0.0084
Jul-02	<b>0.0071</b>	U	0.0056	0.0097
Nov-02	<b>0.0033</b>	U	0.0043	0.0041
Mar-03	U	U	U	U
May-03	<b>0.0096</b>	0.0036	U	U
Aug-03	<b>0.0073</b>	U	0.0077	0.0056
Nov-03	<b>0.0081</b>	U	0.0047	0.0058
Mar-04	<b>0.0091</b>	0.0034	0.0056	0.0099

TEST 2  
STATISTICS FOR POND 18 CELL A (WMU 15)

**Selenium**

<u>Date</u>	<u>Upgradient Wells</u>		<u>Downgradient Wells</u>	
	<u>Well 174</u>	<u>Well 154</u>	<u>Well 177</u>	<u>Well 178</u>
May-04	<b>0.0090</b>	0.0045	U	0.0099
Aug-04	<b>0.0099</b>	0.0047	0.0061	0.0101
Nov-04	<b>0.0054</b>	U	U	0.0071
Feb-05	<b>0.0071</b>	0.0034	0.0043	0.0087
May-05	<b>0.0070</b>	U	0.0055	0.0108
Aug-05	<b>0.0032</b>	0.0025	0.0048	0.0072
Nov-05	<b>0.0083</b>	0.0039	0.0050	0.0070
Feb-06	<b>0.0068</b>	0.0040	0.0044	0.0099
May-06	<b>0.0089</b>	0.0032	0.0046	0.0119
Aug-06	<b>0.0102</b>	0.0084	0.0108	0.0128
Nov-06	<b>0.0081</b>	0.0046	0.0061	0.0088
Feb-07	<b>0.0038</b>	U	0.0035	0.0045
May-07	<b>0.0071</b>	0.0053	0.0036	0.0114
Aug-07	<b>0.0082</b>	U	0.0037	0.0088
Nov-07	<b>0.0038</b>	0.0048	U	0.0062
Feb-08	<b>0.0072</b>	0.0070	0.0056	0.0080
May-08	<b>0.0046</b>	U	0.0065	0.0095
Aug-08	<b>0.0056</b>	U	U	0.0082
Nov-08	<b>0.0060</b>	0.0058	U	0.0073
Feb-09	<b>0.0059</b>	U	0.0051	0.0052
May-09	<b>0.0055</b>	U	0.0072	0.0066
Aug-09	<b>0.0068</b>	0.0073	0.0071	0.0108
Nov-09	<b>0.0059</b>	0.0055	0.0078	0.0074
Feb-10	<b>0.0058</b>	U	0.0059	0.0104
Apr-10	U	U	U	0.0065
Jul-10	<b>0.0064</b>	U	U	0.0087
Nov-10	<b>0.0064</b>	0.0048	0.0053	0.0069
Feb-11	U	0.0051	0.0089	0.0085
Apr-11	<b>0.0077</b>	0.0082	0.0057	0.0097
Jul-11	<b>0.0080</b>	0.0042	0.0049	0.0073
Nov-11	<b>0.0078</b>	0.0047	0.0078	0.0120
Feb-12	<b>0.0033</b>	0.0019	0.0031	0.0043
May-12	<b>0.0035</b>	0.0020	0.0032	0.0050
Aug-12	<b>0.0048</b>	0.0027	0.0043	0.0064
Oct-12	<b>0.0054</b>	0.0030	0.0043	0.0054
Feb-13	<b>0.0048</b>	0.0029	0.0043	0.0061
May-13	<b>0.0048</b>	0.0030	0.0045	0.0065
Jul-13	<b>0.0049</b>	0.0031	0.0045	0.0061
Nov-13	<b>0.0052</b>	0.0031	0.0045	0.0054
Feb-14	<i>0.0053</i>	<i>0.0031</i>	<i>0.0045</i>	<i>0.0069</i>
Apr-14	<i>0.0049</i>	<i>0.0031</i>	<i>0.0041</i>	<i>0.0056</i>
Jul-14	<i>0.0053</i>	<i>0.0034</i>	<i>0.0049</i>	<i>0.0067</i>
Nov-14	<i>0.0054</i>	<i>0.0034</i>	<i>0.0046</i>	<i>0.0044</i>

TEST 2  
STATISTICS FOR POND 18 CELL A (WMU 15)

<b>Selenium</b>				
<u>Date</u>	<b>Upgradient Wells</b>	<b>Downgradient Wells</b>		
	<u>Well 174</u>	<u>Well 154</u>	<u>Well 177</u>	<u>Well 178</u>
<b>Test 2 Results</b>				
	<b>Well 174</b>	Well 154	Well 177	Well 178
Pre-2014 Mean	<b>0.0060</b>	0.0049	0.0068	0.0080
2014 Mean	<b>0.0052</b>	0.0033	0.0045	0.0059
<b>1991-2014 Statistical Summary</b>				
Mean	<b>0.006</b>	0.005	0.007	0.008
Median	<b>0.006</b>	0.004	0.005	0.007
Standard Deviation	<b>0.002</b>	0.002	0.002	0.002
Kurtosis	<b>-0.588</b>	16.689	2.762	-0.627
Skewness	<b>0.257</b>	3.536	1.444	0.396
Minimum	<b>0.003</b>	0.002	0.003	0.004
Maximum	<b>0.013</b>	0.018	0.013	0.013
Count	<b>59</b>	41	47	61
<p>U = Not Detected; #N/A = Value not calculated because of non-detect or not sampled values in data set.            N.S = Not Sampled, Upgradient well(s) in bold; 2014 data in italics.            All concentrations in mg/l.</p>				

### Selenium in Groundwater (WMU 15)

